



Master Law & Technology

Zero-rating and net neutrality in the European Union

What legal approach should the EU legislator adopt with respect to zero-rating offers where applications do not count towards the data cap of the consumer?

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List of abbreviations

BEREC	Body of European Regulators for Electronic Communications
BIPT	Belgian Institute for Postal Services and Telecommunications
DTA	Dutch Telecommunications Act
ECJ	European Court of Justice
EU	European Union
IAP	Internet Access Provider
IP	Internet Protocol
TCP	Transmission Control Protocol
UDP	User Datagram Protocol

Chapter 1: Introduction

On the 10th of October 2016, the mobile phone network operator T-Mobile launched the “Data-free Music” service in the Netherlands. This service combines a data package of 6GB with the free streaming of music from various apps, such as Deezer, Spotify, Napster and Tidalⁱ. The next day after the launch of this new service by T-Mobile, the Dutch telecom authorityⁱⁱ, the Authority for Consumers & Marketsⁱⁱⁱ, announced that it would investigate the compliance of the “Data-free Music” service with Dutch net neutrality law. In its announcement, the Dutch telecom authority claimed that the offer by T-Mobile might look very attractive to consumers at first sight, but that in the long-run “it is in the interest of internet users that providers in no way influence the way individuals use the internet”^{iv}. As a response, T-Mobile stated on its website that it considers the “Data-free Music” service to be in line with EU law and that it is willing to “defend the interests of its customers in court”^v. The Netherlands is not the only country in the European Union (EU) where a zero-rating deal popped up; also in Belgium, Sweden and Hungary telecom authorities were confronted with zero-rating deals from mobile Internet Access Providers (further: IAPs). The legal clash between telecom authorities and IAPs is at the heart of the debate about how the data streams, that constitute the internet, should be controlled and by whom. In other words, the debate is about the future architecture of the internet; it is about the kind of internet that we, as a society, want to have in the future.

1.1 The design of the internet architecture

The internet is a globally interconnected network which enables its users all over the world to communicate and share information and content with each other^{vi}. The communication between the internet users occurs on the basis of the “Transmission Control Protocol” (TCP) and “Internet Protocol” (IP), together the so-called “TCP/IP protocol”. This protocol ensures that data flows (e.g.: an email) are split up into chunks, the “data packets”, and that these packets are independently transmitted through the network from one internet user to another. The data chunks are then put back together to the original data flow (e.g.: the original email) at the receiver’s end^{vii}. Another essential foundation upon which the internet architecture is built, is the so-called “end-to-end principle”. This principle entails that the “intelligence” of the internet architecture is to be found at the “ends” of the network, namely: the applications and the devices connected to the internet network^{viii}. The network itself, on the other hand, merely transmits the data between the different “ends” of the network^{ix}. Obviously this principle has strong implications for the way that IAPs should treat internet traffic. Namely, on the basis of the end-to-end principle, it can be argued that IAPs should not intervene with what is called the “payload” or content of the IP packet that is transmitted through the network^x. Instead, the IAP should only scan the so-called “header” of the IP packet, which tells the IAP the relevant information (such as the origin and destination address) needed to transmit the IP packet through the network^{xi}. The end-to-end principle has been considered by some to be essential

for the innovation and creativity that the internet has brought about^{xii}. This is because the decentralized design of the internet enables everyone with an internet connection to develop and implement ideas to improve the functioning and design of the internet at low costs – at least in theory. Consequently, many different solutions to a (technical) problem co-exist and compete with each other on the internet, resulting in a flourishing of innovation and creativity^{xiii}.

1.2 The net neutrality principle

Strongly connected to the end-to-end principle, is “net neutrality”, a term first introduced by law professor Tim Wu^{xiv}. No common definition of net neutrality exists and the concept has various (partly) overlapping dimensions^{xv}. Throughout the analysis of this thesis, net neutrality refers to the public policy principle that all internet traffic should be treated the same by IAPs^{xvi}. More specifically, net neutrality means in this thesis that an IAP should not favor certain applications over others as it imposes the risk that fair competition between application providers and the development of applications is distorted^{xvii}. Furthermore, different but overlapping dimensions of net neutrality are dealt with in this thesis, including fair competition between application providers, innovation on the internet and freedom of choice and expression.

By several scholars net neutrality is believed to foster the development of the internet since it provides for the incentive to create new applications and content on the internet (i.e.: the innovation dimension). Namely, non-discrimination between internet traffic ensures that new application and content providers have a fair chance against incumbent providers, because the applications and content already available on the internet are not treated more beneficially by IAPs than the newly introduced applications and content (i.e.: the fair competition dimension)^{xviii}. In other words, net neutrality aims to prevent IAPs from picking winners and losers on the internet by prohibiting that IAPs decide what applications and content are consumed by the internet user (i.e.: the freedom of choice and expression dimension)^{xix}. Thus, net neutrality aims to guarantee that the range and diversity of apps and content is preserved in the internet ecosystem.

1.3 Zero-rating practices in the net neutrality debate

Zero-rating can take many forms and has different meanings depending on the context. In developing countries, zero-rating offers, such as Wikipedia Zero, generally comprise internet access limited to a slimmed down version of an application or several applications^{xx}. This form of zero-rating is fundamentally different from the type of zero-rating that generally occurs in the developed world and which is the subject of this thesis. This thesis focuses on the type of zero-rating where the use of certain applications, via *mobile* internet access, is not counted

towards the monthly maximum amount of data to be used by mobile phone users^{xxi}. From a technical point of view, this type of zero-rating works as follows. The IAP implements software which recognizes on the basis of IP addresses whether data packages originate from a zero-rated application or not^{xxii}. If the software detects that certain internet traffic corresponds to the use of a zero-rated application, then the data flow is not registered in the system of the IAP that counts how much data the consumer has used^{xxiii}. An example of this type of zero-rating is the aforementioned “Data-free Music” service, as offered by T-Mobile Netherlands, which provides the consumer with the “free” use of music streaming applications when subscribing for the 6GB data package service. However, the Netherlands is not the only EU country where this form of zero-rating has been placed on the market; also in Belgium, Hungary and Sweden this type of zero-rating deals have been introduced by IAPs. This type of zero-rating does not require the IAP to interfere with the “payload” or content of the data packages, but only requires the IAP to identify the origin and destination of the data packages in order to make sure that the use of zero-rated applications does not count towards the cap. Therefore, this form of zero-rating is not in contradiction with the end-to-end principle. However, since this type of zero-rating – at least potentially – favors certain applications over others, a tension exists between these practices or agreements and the broader public policy principle of net neutrality^{xxiv}. Whether or not zero-rating is in line with the net neutrality principle, and to what extent these practices or agreements should be allowed by the law, is one of the most hotly debated issues in the net neutrality debate. This thesis provides a legal perspective on zero-rating, based on both economic and internet freedom arguments.

1.4 The Net Neutrality Regulation

Legislators all across the world have made attempts to translate the principle of net neutrality into legal rules. On the 25th of November 2015 the EU legislator adopted Regulation (EU) 2015/2120^{xxv} (further: Net Neutrality Regulation), which contains a set of rules on net neutrality for the entire EU. The Net Neutrality Regulation is applicable as of the 30th of April 2016^{xxvi} and lays down the principle that all internet traffic should be treated the same^{xxvii}. Besides that, the Net Neutrality Regulation gives end-users the right to access and distribute information and content, use and provide applications, and use terminal equipment of their choice (further: the right to open internet access)^{xxviii}. Article 3(2) of the Net Neutrality Regulation prohibits agreements and commercial practices which “limit the exercise of the rights of end users”^{xxix}, referring to the end users’ right to open internet access.

1.5 The diverse approaches towards zero-rating in the EU

In the EU, several regulatory approaches towards zero-rating exist under the Net Neutrality Regulation. After the adoption of the Net Neutrality Regulation, the Body of European Regulators for Electronic Communications (further: BEREC), delivered Guidelines on the

Implementation by National Regulators of European Net Neutrality Rules (further: BEREC Guidelines). The BEREC Guidelines lay down an interpretation of the Net Neutrality Regulation and list various factors which have to be taken into account by national telecom authorities when they assess a zero-rating deal. The Belgian telecom authority has assessed a zero-rating deal under the BEREC Guidelines. The Dutch telecom authority, on the other hand, has decided not to follow the BEREC Guidelines, but to follow a Dutch national law banning all forms of zero-rating. In the following paragraphs the various regulatory approaches in the EU will be shortly set out.

1.5.1 The BEREC Guidelines on net neutrality

BEREC has been established by Regulation (EC) 1211/2009 on the establishment of BEREC^{xxx} and serves as a cooperation platform for telecom authorities and the European Commission (further: the Commission)^{xxxi}. In the fulfillment of that role, BEREC should contribute to the development and improved functioning of the internal market in the sector of telecommunications, “by aiming to ensure a consistent application of the EU regulatory framework for electronic communications”^{xxxii}. One of the tasks of BEREC is to provide guidelines^{xxxiii} of which the national telecom authorities and the Commission should take “utmost account”^{xxxiv}. The EU legislator has included a provision in the Net Neutrality Regulation, from which it follows that BEREC had to deliver Guidelines on 30 August 2016 the latest in order to contribute to the consistent application by the national telecom authorities of the Net Neutrality Regulation. The BEREC Guidelines formulate an interpretation of Article 3(2) of the Net Neutrality Regulation which allows zero-rating unless the practice or agreement limits the right of end-users to open internet access. The BEREC Guidelines allow zero-rating which is applied to an entire category of applications as long as, *inter alia*, the market position of IAPs and the application providers concerned is not too strong and the size of the data bundle for consumers is not too small (see Chapter 3).

1.5.2 The Dutch legal and regulatory approach

The Netherlands, having voted against the Net Neutrality Regulation at the EU level, primarily because the said Regulation does not contain a clear prohibition on zero-rating practices or agreements, introduced a law that banned zero-rating practices or agreements of any kind^{xxxv}. The Dutch law, approved by the Dutch Parliament, also prohibited zero-rating applied to an entire category of apps^{xxxvi}. The total ban on zero-rating, although supported by for example the founder of the world wide web himself^{xxxvii}, contradicted the interpretation of the Net Neutrality Regulation by BEREC. The Dutch government, being aware of the fact that the law is in contradiction with the BEREC Guidelines, held on to its position and motivated the total ban on zero-rating practices by the argument that the principle of non-discrimination, as laid down in Article 3(3) of the Net Neutrality Regulation, means that any form of discrimination, including zero-rating is not allowed^{xxxviii}. This strict position on zero-rating, taken by Dutch legislator, has

been followed by the Dutch telecom authority in the T-Mobile case. However, in the T-Mobile case a Dutch district court has ruled that the Net Neutrality Regulation does not contain a categorical ban on zero-rating^{xxxix}. Therefore, the Dutch district court has ruled that the categorical ban in the Dutch Telecommunications Act (further: DTA) does not apply, as the law contradicts the Net Neutrality Regulation^{xl}. In response to questions from the Dutch parliament, the former Minister of Economic Affairs has now declared that the total ban on zero-rating will be deleted from the DTA^{xli}.

1.5.3 The Belgian, Swedish and Hungarian regulatory approach

In a report, the Belgian telecom authority, Belgian Institute for Postal Services and Telecommunications (further: BIPT), has taken a position on zero-rating offers in Belgium. The report evaluates several zero-rating offers from a Belgian mobile IAP, Proximus, in which the consumer can choose one out of six popular applications (i.e.: Facebook, Whatsapp, Snapchat, Instagram, Twitter and Pokémon GO)^{xlii}. The BIPT applied the BEREC Guidelines and came to the conclusion that these zero-rating deals from Proximus do not limit the rights of end-users under the Net Neutrality Regulation^{xliii}. In Hungary and Sweden also several zero-rating offers from IAPs have been assessed under the BEREC Guidelines. However, the Swedish and Hungarian telecom authorities prohibited the zero-rating deals, because non-zero-rated applications were slowed down after the data cap had been reached by the consumer^{xliv}. Since the administrative decisions of the Hungarian and Swedish telecom authorities did not provide for an evaluation of the type of zero-rating, which is subject to this thesis, these administrative decisions are not included in the analysis of this thesis.

1.6 Research questions, structure and methodology

As shown in the former sections, telecom authorities in the EU are confronted with zero-rating practices or agreements where the use of certain applications is not counted towards the data cap. Some of these authorities have already taken a position on zero-rating, while others might be forced to take a position in the (near) future. This thesis applies qualitative research^{xlv} to find the most desirable legal approach, to be adopted by the EU legislator, towards this type of zero-rating. For that purpose, this thesis compares three regulatory approaches towards zero-rating: (1) allowing the zero-rating of one single application (i.e.: the Belgian regulatory approach), (2) allowing the zero-rating of the entire category of applications under certain conditions (i.e.: the regulatory approach under the BEREC Guidelines), and (3) not allowing zero-rating of any kind (i.e.: the regulatory approach of the Dutch telecom authority in the T-Mobile case). In other words, this thesis applies a “comparative research design”^{xlvi} as three different regulatory approaches towards zero-rating are compared with each other. As is shown throughout the thesis, the three regulatory approaches are underpinned by different views of net neutrality and zero-rating. On the basis of a literature review, this thesis identifies the different views in the zero-rating debate and distinguishes between those who place emphasis

on the importance of (a strict reading of) net neutrality and the threat that zero-rating poses to internet freedom and fair competition on the internet (“the net neutrality advocates”), and those who have a more pragmatic approach towards net neutrality and call for a purely economic analysis of zero-rating offers (for the purpose of this thesis: “the economists”). This thesis sheds a critical light on the validity of the arguments of both the net neutrality advocates and the economists and takes a position on the (un)desirability of zero-rating. Based on the position that is taken in the zero-rating debate, this thesis recommends the most desirable legal approach towards zero-rating, to be adopted by the EU legislator, from an economic and internet freedom perspective. Thus, the research question that this thesis tries to answer is the following:

What legal approach should the EU legislator adopt with respect to zero-rating offers where applications do not count towards the data cap of the consumer?

In order to be able to formulate an answer to the research question, this thesis first outlines the legal framework that applies in the EU with regard to zero-rating practices or agreements. More specifically, it is investigated how zero-rating is legislated in the Net Neutrality Regulation and what the intentions of the EU legislator are behind the way that these practices or agreements are legislated. The intentions of the EU legislator are derived from the preamble and the legislative history of the Net Neutrality Regulation.

The Dutch legislator – followed by the Dutch telecom authority in the T-Mobile Case – had adopted the reading of the Net Neutrality Regulation, being that the said Regulation lays down a categorical ban on zero-rating^{xlvii}. This thesis shows the roots of the former Dutch legal approach towards zero-rating and how this legal approach translated into the strict regulatory approach of the Dutch telecom authority in the T-Mobile case. In order to establish the origins of the former Dutch regulatory approach towards zero-rating, this thesis analyzes (1) former provision from the DTA on zero-rating and the legislative history thereof, (2) the *Vodafone vs. ACM* case regarding zero-rating offers, (3) the administrative decision of the Dutch telecom authority in the T-Mobile case and (4) the decision of the Dutch district court in the T-Mobile case. For the purpose of outlining the legal frameworks, the following sub-question is addressed in Chapter 2:

How did the former approach towards zero-rating, taken by the Dutch legislator and followed by the Dutch telecom authority in the T-Mobile case, relate to the way that the EU legislator has legislated zero-rating in the Net Neutrality Regulation?

After the EU and Dutch legal frameworks are brought forward, this thesis sets out how zero-rating practices or agreements should be assessed by national telecom authorities under the BEREC Guidelines. The BEREC Guidelines provide for a list of factors, which have to be taken

into account by national telecom authorities when they evaluate zero-rating deals, but the interpretation of these factors remains largely unclear. Therefore, this thesis clarifies the interpretation of the factors. As the BEREC Guidelines give leeway to different interpretations, principles from other areas of law, such as EU competition law, are applied by analogy in order to give a legally solid interpretation of the BEREC Guidelines. Besides that, the approach by the Belgian telecom authority under the BEREC Guidelines is investigated. This is done on the basis of the report from the Belgian telecom authority where the said authority allowed the zero-rating of one single application. It is analyzed how the Belgian approach towards zero-rating relates to my own interpretation of the BEREC Guidelines. The following sub-question will be answered in Chapter 3:

How should the national telecom authorities conduct an assessment under the BEREC Guidelines of a zero-rating offer where applications do not count towards the data cap, and how does the Belgian telecom authority interpret the BEREC Guidelines?

When the regulatory approach of BEREC and the Belgian telecom authority towards zero-rating is clarified, this thesis identifies the arguments from both the net neutrality advocates and the economists in the zero-rating debate and addresses the controversies between these two perspectives. When evaluating the various internet freedom and economic arguments in the zero-rating debate, this thesis takes a position of itself in the zero-rating debate. Based on the position on zero-rating, this thesis identifies the most desirable regulatory approach towards zero-rating from an internet freedom and economic perspective. The following sub-question will be answered in Chapter 4:

What regulatory approach towards the zero-rating of applications, adopted by national telecom authorities, is most desirable from an economic and internet freedom perspective?

On the basis of the most desirable regulatory approach the legal approach, this thesis concludes in Chapter 5 with the recommended legal approach, to be adopted by the EU legislator from an internet freedom and economic point of view. Throughout the thesis, it is shown how internet freedom and economic considerations play a role in the three different regulatory approaches towards zero-rating. In other words, an economic and internet freedom analysis of law is made. The zero-rating offer from T-Mobile in the Netherlands is used as an illustrative example to clarify certain claims made in this thesis.

Chapter 2: The legislation and regulation of zero-rating in the EU and the Netherlands

In this chapter it is shown that the Dutch legislator had introduced a categorical ban on zero-rating, even though the EU legislator did not seem to intend to incorporate such a ban in the Net Neutrality Regulation. The Dutch legal approach towards zero-rating led to the strict regulatory approach of the Dutch telecom authority in the T-Mobile case. First of all, this chapter discusses the various provisions of the Net Neutrality Regulation, which are relevant for the assessment of zero-rating offers. In that context, the preamble and the legislative history of the Net Neutrality Regulation offer guidance for the interpretation of the relevant provisions. After having set out the legal approach of the EU legislator, the former Dutch legal approach towards zero-rating is discussed. A Dutch district court has now ruled that the Dutch law banning zero-rating does not apply as the law contradicts the intentions behind the Net Neutrality Regulation to not introduce a categorical ban on zero-rating^{xlviii}. In this chapter it is argued that the wording of the Net Neutrality Regulation indeed does not leave the possibility for EU Member States to introduce a categorical ban on zero-rating. However, the roots of the Dutch legal approach towards zero-rating are brought forward in this chapter in order to show why the Dutch legislator deviated from the intentions of the EU legislator with respect to zero-rating practices or agreements. The Dutch regulatory framework consists of (1) provisions from the DTA and the legislative history thereof, (2) Dutch case law regarding zero-rating offers, (3) the administrative decision of the Dutch telecom authority in the T-Mobile case and (4) the decision of the Dutch district court in the T-Mobile case. Throughout this chapter, references are made to the T-Mobile case, in order to clarify certain claims made in the overview of the legal frameworks.

2.1 The end users' right to open internet access

In the Net Neutrality Regulation, the EU legislator acknowledges that a relationship exists between (1) the way that the IAPs can and cannot treat internet traffic and (2) the innovation that the internet brings about. Namely, the EU legislator states in the first sentence of the preamble of the Regulation that it “aims to establish common rules to safeguard equal and non-discriminatory treatment of traffic in the provision of internet access services and related end-users’ rights”^{xlix}. The rationale behind this obligation for the IAP becomes apparent from the sentence that follows: the reason is “to protect end users and simultaneously to guarantee the continued functioning of the internet ecosystem as an engine of innovation”^l. In order to accomplish these aims, the Regulation provides the end-users, *inter alia*, with a right to “access and distribute information, use and provide applications and services, irrespective of the end-user’s or provider’s location or the location, origin or destination of the information, content, application or service, via internet access”^{li}. In other words, the Net Neutrality Regulation gives end-users the right to open internet access. In the context of the T-Mobile case, this means that

the providers of music-streaming applications have the right to provide the respective applications to consumers on the internet, whereas consumers have the right to access the music streaming applications of their choice.

2.2 The prohibition to limit end users' rights

It follows from Article 3(2) of the Net Neutrality Regulation that the aforementioned right to open internet access (see section 2.1) should not be limited by either the commercial practices of IAPs or by “agreements between internet access providers and end-users on commercial and technical conditions and the characteristics of internet access services such as price, data volumes or speed”^{lii}. If commercial practices or agreements, such as zero-rating, limit the end-user’s right to open internet access, the provisions of the Regulation safeguarding the right to open internet access would be circumvented and this is not allowed under the Regulation^{liii}. The national telecom authorities have the task to step in, if “agreements or commercial practices, by reason of their scale, lead to situations where end-users choice is materially reduced in practice”^{liv}. In that context, the Net Neutrality Regulation mentions certain factors that have to be taken into consideration when assessing whether this is the case, such as the market position of the IAP and the market position of the application providers^{lv}. However, the mentioned factors should not be regarded as an exhaustive list of factors to be taken into account when evaluating whether an agreement or commercial practice materially reduces end-users’ choice in practice^{lvi}. Depending on the specific circumstances of the case, other factors might have to be taken into consideration as well.

2.3 The obligation to treat all internet traffic equally

Besides the prohibition to limit the end user’s right to open internet access by means of agreements or commercial practice, the IAP has the obligation “to treat all internet traffic equally, without discrimination, restriction or interference”^{lvii}, unless one of the specified exceptions, as laid down in the Regulation, applies^{lviii}. Furthermore, the rule to treat all internet traffic equally is applicable “irrespective of the sender or receiver, content, application or service, or terminal equipment”^{lix}. An offer by an IAP, such as T-Mobile’s “Data-free Music”, where certain applications are zero-rated and others are not, potentially violates the obligation for IAPs to treat all internet traffic equally. This is explored later (see section 2.9).

2.4 The legislative history of the Net Neutrality Regulation

2.4.1 The attempt to include a total ban in the Net Neutrality Regulation

From the legislative history of the Net Neutrality Regulation follows that – during the negotiations on the text of the Net Neutrality Regulation in the Council of the European Union – certain EU Member States have tried to convince the Council of the European Union to include

a provision in the Regulation that would explicitly ban all forms of zero-rating^{lx}. However, this attempt has not succeeded, because this total ban could not get the necessary support from other Member States. In a later phase of the legislative process, members of the European Parliament proposed an amendment to the text of the Net Neutrality Regulation^{lxi}. In this proposed amendment, Member States would be given the possibility to adopt own national laws regarding zero-rating (See Appendix A). This amendment, however, was rejected and thus did not become part of the final text of the Net Neutrality Regulation.

2.4.2 *The intentions of the Commission behind the Net Neutrality Regulation*

2.4.2.1 *The Q&A Factsheet of the Commission*

In its *Q&A Factsheet*, the Commission emphasizes the importance of the Net Neutrality Regulation for start-up companies that offer their product and services on the internet^{lxii}. The rules on net neutrality try to ensure that start-up companies are “able to compete on an equal footing with larger players”^{lxiii}. The Net Neutrality Regulation thus seeks to establish a level playing field between big and large players that compete with each other on the internet. According to the Commission, the rules in the Net Neutrality Regulation mean that “internet access providers cannot pick winners or losers on the internet, or decide which content and services are available”^{lxiv}. Thus, the Regulation seeks to ensure that all application and content providers “have guaranteed access to end-users in the open internet”^{lxv} and that “this access will not depend on the wishes or particular commercial interests of internet service providers”^{lxvi}.

With respect to zero-rating practices, the Commission considers that these commercial practices or agreements should not limit the end user’s right to open internet access. According to the Commission, “zero-rating could in some circumstances have harmful effects on competition or access to the market by new innovative services and lead to situations where end users’ choice are materially reduced in practice”^{lxvii}. Therefore, national telecom authorities should “stop and sanction unfair or abusive commercial agreements and practices that may hinder the development of new technologies and of new and innovative services or applications”^{lxviii}. In other words, for the purpose of innovation, the Commission finds it essential that new providers of applications and content have a fair chance against incumbent providers, so that new players have an incentive to develop new technologies, applications and content on the internet.

2.4.2.2 *The answer from the Commission to the European Parliament*

How the Commission views the relationship between the different provisions which seek to safeguard the open internet (i.e.: Article 3(2) and (3)(3) Net Neutrality) does not become immediately clear after reading the Commission’s *Q&A Factsheet*. However, more guidance can be found in an answer of the Commission to a question from the European Parliament with

respect to zero-rating^{lxxix}. In this answer, the representative of the Commission explains that, with regard to zero-rating, there is “neither a blanket ban of zero-rating, nor is there a free pass”^{lxxx}. Zero-rating, so the representative of the Commission continues, is only possible if such practices are in accordance with the rules safeguarding the open internet (i.e.: with Article 3 Net Neutrality Regulation)^{lxxxi}. In that context, the Commission distinguishes between the different provisions that safeguard the open internet (again: Article 3(2) and 3(3) Net Neutrality Regulation) and argues that all these provisions protect the end-user against the harms of zero-rating^{lxxxii}. Furthermore, the Commission brings forward that national telecom authorities have to evaluate zero-rating on “their merits, case-by-case, in the specific national circumstances, to ensure that the objective of effective end-user choice is not undermined”^{lxxxiii}.

2.5 Fundamental rights

Although the Commission mostly stresses in its *Q&A Factsheet* how the Net Neutrality Regulation aims to promote innovation in the EU, rules on net neutrality are also important from a fundamental rights perspective. In this section the relevance of fundamental rights in the context of the Net Neutrality Regulation is shortly discussed.

2.5.1 Net neutrality and the Council of Europe

In an early stage of the legislative process, which led to the adoption of the Net Neutrality Regulation, the Council of Europe has issued a ‘Recommendation on protecting and promoting the right to freedom of expression and the right to private life with regard to network neutrality’^{lxxxiv} (further: Net Neutrality Recommendation), in which the Committee of Ministers set out network neutrality guidelines. In this document, the Council of Europe emphasizes the importance of net neutrality for the right to freedom of expression, including the right to receive and impart information and ideas, as guaranteed by Article 10 of the European Convention on Human Rights^{lxxxv}. Since EU citizens are increasingly dependent on internet access for the participation in a democratic society, the Council of Europe regards it essential that rules on net neutrality are imposed on IAPs^{lxxxvi}. As a result of the technical ability of IAPs to control the dissemination of information through the internet networks, equal treatment of internet traffic is essential to safeguard the right of EU citizens to receive and impart information of their choice when accessing the internet^{lxxxvii}.

2.5.2 References to fundamental rights in the Net Neutrality Regulation

The EU legislator also makes a reference in the Net Neutrality Regulation to the importance of fundamental rights. From the preamble of the Net Neutrality Regulation it follows that the Regulation “respects the fundamental rights and observes the principles recognized in particular by the Charter of Fundamental Rights of the European Union^{lxxxviii}, notably (...) the freedom of expression and information, the freedom to conduct business, non-discrimination

and consumer protection”^{lxxxix}. With regard to the zero-rating, as conducted by T-Mobile Netherlands, it can be argued that there are implications for, *inter alia*, the right to freedom of expression, if the streaming of music from certain applications does not count as data usage. This is the case because certain music streaming applications represent a certain repertoire of music. If certain music streaming applications are favored over others, then this also means that certain repertoires of music are possibly favored over others (see Chapter 4)^{lxxx}.

2.6 The Dutch legal framework

Before the Net Neutrality Regulation had been adopted, the Dutch Telecommunications Act (old) contained a provision prohibiting zero-rating. Article 7.4a, paragraph 3, of the DTA read as follows:

“Providers of Internet access services shall not make their charges for Internet access services dependent on the services and applications which are offered or used via said services”^{lxxxi}.

In the following subsections the meaning of this legal provision in the DTA is analyzed, both before the adoption of the Net Neutrality Regulation (subsection 2.6.1) and after (subsection 2.6.2).

2.6.1 The regulation of zero-rating before the adoption of the Regulation

From the legislative history of this provision, it followed that it was not allowed to “provide a service, consisting of the access to webpages, services and applications, where the use of certain applications or services is charged separately”^{lxxxii}. On the 4th of February 2016, a Dutch district court had to decide for the first time whether zero-rating was allowed under the mentioned provision of the DTA or not. This court case, *Vodafone vs. ACM*, concerned a multinational telecommunications firm, Vodafone, which offered the Dutch consumer the so-called “Vodafone Red” deal^{lxxxiii}. That deal combined mobile internet access service with the zero-rated HBO GO application^{lxxxiv}. The Dutch district court then ruled, on the basis of the above mentioned legislative history, that the IAP may not “link the tariffs of internet access to specific internet services of which the end-user can make use”^{lxxxv}. Since the average costs of mobile data usage would go down if a consumer would make use of the zero-rated HBO GO application, the end-user could “possibly be steered in its choices, which is in violation of net neutrality”^{lxxxvi}. Thus, under Dutch law, a prohibition on zero-rating existed before the Net Neutrality Regulation applied.

2.6.2 The legislation of zero-rating after the adoption of the Regulation

After the adoption of the Regulation, there had been a discussion in the Dutch Parliament about the legal ban of zero-rating, and whether the aforementioned provision in the DTA

should still be included in the Dutch law or not. Eventually, the Dutch legislator explicitly decided to uphold the said provision in the DTA and not to follow the BEREC Guidelines, because these Guidelines would – according to the Dutch Minister of Economic Affairs – ignore Article 3(3) of the Net Neutrality Regulation, which formulates the principle that all internet traffic should be treated without discrimination^{lxxxvii}. In other words, the Dutch legislator considered the BEREC Guidelines in contradiction with Article 3(3) of the Net Neutrality Regulation. Although the Dutch legislator was aware that the Dutch ban of zero-rating could lead to a difference in legal rules within the EU with regard to zero-rating, the Dutch legislator found it essential that the said provision in the DTA was upheld^{lxxxviii}. The reasoning of the Dutch legislator behind this position was that a total ban of zero-rating is more effective (1) in preventing that new and innovative parties are excluded from the market since incumbent companies are capable of offering their services more cheaply on the internet, and (2) in preventing that IAPs use the power over their networks in order to steer the choice of end-users between different apps and content^{lxxxix}.

2.7 The Dutch telecom authority and its administrative decision

In the preamble of the Net Neutrality Regulation is formulated that national telecom authorities play a fundamental role in making sure that end-users are capable of effectively exercising their rights under the Net Neutrality Regulation and that the rules on the safeguarding of open internet access are complied with^{xc}. The Dutch telecom authority has issued an administrative decision in which the authority concludes that T-Mobile's "Data-free Music" service is not allowed under the DTA. T-Mobile claimed, as opposed to the Dutch legislator and telecom authority, that Article 3(3) Net Neutrality Regulation^{xc} should be interpreted as a prohibition to treat internet traffic differently in *technical* rather than *commercial* terms^{xcii}. In T-Mobile's view, zero-rating merely means that internet traffic is treated *technically* differently and, therefore, zero-rating does not violate Article 3(3) of the Net Neutrality Regulation^{xciii}. Instead, so T-Mobile's reasoning goes, the BEREC Guidelines should have been followed by the Dutch telecom authority and, consequently, zero-rating should have been assessed only under Article 3(2) on a case-by-case basis^{xciv}.

2.8 The decision of the Dutch district court in the T-Mobile case

On the 20th of April 2017 the Dutch district court ruled in the T-Mobile case that the Net Neutrality Regulation does not contain a total ban on zero-rating practices or agreements^{xcv}. To support this consideration, the Dutch district court refers to the legislative history of the Net Neutrality Regulation from which follows that no categorical prohibition on zero-rating has been included in the Net Neutrality Regulation (see section 2.4)^{xcvi}. In line with the above mentioned reasoning of T-Mobile (see section 2.7) the Dutch district court decides that it follows from the wording of the Net Neutrality Regulation that the obligation to treat all

internet traffic equally regards internet traffic (management) and not pricing^{xcvii}. As a result, the Dutch law banning zero-rating of any kind does not apply as it contradicts the Net Neutrality Regulation.

2.9 The legal interpretation of the Net Neutrality Regulation

In this section it will be argued that the decision from the Dutch district court in the T-Mobile case (see section 2.8) is correct from an EU law perspective. Although it is beyond the scope of this thesis to deal extensively with the interpretation methods that are used in the case law of the European Court of Justice (ECJ), a few comments in this respect are necessary.

2.9.1 The literal and historical interpretation

The wording of an EU law provision functions as a basis for the interpretation of any legal provision by the ECJ^{xcviii}. The wording of Article 3(3) Net Neutrality Regulation indicates that the obligation to treat all internet traffic equally concerns the technical treatment of internet traffic and not the price that the consumer pays for the use of applications on the internet. Article 3(3), second and third paragraph, deal with the exception to the rule that internet traffic should be treated without discrimination. The said exception concerns the conditions under which an IAP may implement traffic management measures. These traffic management measures concern the technical treatment of internet traffic. This reading of the Net Neutrality Regulation is confirmed by the legislative history in which the attempts to include (the possibility of) a prohibition of zero-rating clearly failed (see section 2.4).

2.9.2 The systemic and teleological interpretation

The historical interpretation method (see subsection 2.9.1) often does not play a decisive role in the case law of the ECJ^{xcix}. Instead, the systemic and the teleological interpretation method are generally more important for the interpretation of an EU law provision by the ECJ^c. When article 3(3) is interpreted in the light of the broader body of law that the provision forms part of (i.e.: the systemic interpretation method^{ci}) and the purposes behind the provision (i.e.: the teleological interpretation method^{cii}), then the purpose of a provision can be derived from, *inter alia*, the preamble^{ciii}. The preamble of the Net Neutrality Regulation formulates the aims to (1) “establish common rules to safeguard equal and non-discriminatory treatment of traffic in the provision of internet access services”^{civ} and (2) “to protect end users and simultaneously to guarantee the continued functioning of the internet ecosystem as an engine of innovation”^{cv}. In the light of the purposes of the Net Neutrality Regulation, it might therefore also be defensible to interpret article 3(3) as prohibiting zero-rating since these commercially discriminating practices or agreements might harm the internet ecosystem (see Chapter 4 for more about this). However, it is uncommon in the case law of the ECJ that the Court – in the light of the purposes behind a certain provision – deviates *significantly* from the wording of a provision of EU law^{cvi}.

As it follows from the wording of article 3(3) that the provision deals with technical rather than commercial discrimination (see the above), the ECJ is likely to follow that interpretation. Besides that, article 3(2) prohibits that “any commercial practices” limit the end-users’ right to open internet access and, consequently, zero-rating falls – following the literal interpretation^{cvii} of the words “commercial practices” – under article 3(2). Therefore, this thesis takes the position that the Net Neutrality Regulation does not contain a categorical ban on zero-rating, but requires the national telecom authorities to evaluate the effects of zero-rating practices on a case-by-case basis.

2.10 Concluding remarks

This chapter dealt with the legal and regulatory approach in both the EU and the Netherlands. Although the EU legislator places a lot of emphasis on economic considerations with respect to the Net Neutrality Regulation, the fundamental rights have also received some weight in the Net Neutrality Regulation. The strict Dutch legal tradition towards zero-rating, although currently contradicting the wording of the Net Neutrality Regulation, is motivated by the Dutch legislator as (1) preventing that new and innovative parties are excluded from the market since incumbent companies are capable of offering their services more cheaply on the internet, and (2) preventing that IAPs use the power over their networks in order to steer the choice of end-users between different apps and content^{cviii}. While the first argument of the Dutch legislator seems to mostly stress the economic importance of a total ban on zero-rating, the second seems to be an internet freedom objection against zero-rating. The arguments of the Dutch legislator behind the total ban on zero-rating are in line with the position of net neutrality advocates in the zero-rating debate (see Chapter 4). In Chapter 4 it is analyzed whether this strict position on zero-rating is more desirable from an economic and internet freedom perspective than (1) the regulatory approach as required by the BEREC Guidelines and (2) the Belgian regulatory approach.

Chapter 3: The approach of BEREC and the Belgian telecom authority towards zero-rating

In Chapter 2 it has been shown that the Dutch legislator, followed by the Dutch telecom authority in the T-Mobile case, had interpreted the Net Neutrality Regulation in contradiction with the wording of the Net Neutrality Regulation. A Dutch district court confirmed that the Net Neutrality Regulation did not leave space for the Dutch legislator to introduce a categorical ban on zero-rating^{cx}. The Dutch district court also considered that the BEREC Guidelines can give more guidance as to the assessment of the zero-rating offer as brought to the market by T-Mobile Netherlands^{cx}. This chapter will focus on the interpretation of the Net Neutrality Regulation, as set out the BEREC Guidelines. The BEREC Guidelines have been issued on the 30th of August 2016 and seek to give guidance as to the regulation of zero-rating in the EU by the national telecom authorities. The BEREC Guidelines state – in short – that zero-rating is allowed, as long as the rights of end-users are *affected* but *not limited*^{cx}. And whether or not a particular zero-rating offer *limits* the rights of end-users to open internet access, has to be decided on the basis of the non-exhaustive list of factors in the BEREC Guidelines. However, these factors leave some unclearness in terms of interpretation. This chapter will therefore seek to clarify the meaning of these factors that are considered relevant by BEREC for the investigation of zero-rating offers in the EU. The common thread, running through the entire assessment as required by BEREC, is the impact of zero-rating on the range and diversity of applications that is available in the internet ecosystem. It is shown in this chapter that the evaluation of zero-rating, as required by the BEREC Guidelines, is mostly based on economic criteria, but considerations of internet freedom also sometimes seem to play a – modest – role.

First of all, (1) the distinction by BEREC between zero-rating and the bundling of an internet access service with the free subscription to an applications and (2) the distinction between several forms of zero-rating is set out (section 3.1). After that, the various factors, relevant for the assessment of zero-rating under the BEREC Guidelines, are discussed. The first factor that is addressed is the impact of zero-rating on the range and diversity of applications (section 3.2). Secondly, the market positions of the IAPs and application providers will be dealt with (section 3.3) Thirdly, it will be brought forward how the size of the monthly data allowance affects the potential impact that zero-rating has on the right to open internet access (section 3.4). Fourthly, the Belgian approach towards zero-rating under the BEREC Guidelines is discussed (section 3.5). Finally, this chapter will end with some concluding remarks (section 3.6). The assessment of a zero-rating offer where music streaming applications are zero-rated is used as an illustrative example in this chapter.

3.1 The BEREC Guidelines and zero-rating

3.1.1 Zero-rating versus a free subscription to an application

BEREC makes a distinction between (1) the use of certain music streaming applications not counting towards the data cap (i.e.: zero-rating) and (2) the bundling of an internet access service with the free subscription to certain music streaming applications for a certain period of time^{cxii}. The difference between the two is that in the case of zero-rating the *transmission of certain internet traffic* is priced differently^{cxiii}, while in the latter case the use of the applications concerned still counts towards the data cap and thus leaves unaffected how the internet traffic is treated by the IAP. By making that distinction, BEREC seems to give weight to both economic and internet freedom considerations. Namely, while the free subscription to music streaming applications affects which application a consumer installs on his or her mobile phone, zero-rating *also* affects the daily use of applications by the consumer. In other words, zero-rating provides for a larger competitive advantage to the application providers concerned (economic consideration) and steers the internet behavior of consumer to a larger extent (internet freedom consideration) than the bundling of an internet access service with the free subscription to certain applications.

3.1.2 The different forms of zero-rating in the BEREC Guidelines

BEREC also distinguishes between different zero-rating offers in terms of the degree to which these offers affect the right to open internet access. According to BEREC, the following zero-rating offers can be distinguished:

1. **A zero-rating offer in which some applications are slowed down or blocked**, while others are not after the data bundle is fully used by the consumer. This offer would, according to BEREC, infringe upon the principle that all internet traffic should be treated equally in technical terms^{cxiv}. This type of zero-rating offers has been prohibited by both the Hungarian and the Swedish telecom authority under the BEREC Guidelines (see section 1.5.3).
2. **A zero-rating offer in which an *entire category of applications* (e.g. all music streaming applications) is zero-rated by the IAP**. This type of offer is, according to BEREC, “more likely to *influence* end-users’ exercise of the right to open internet access, without necessarily *limiting* that right”^{cxv}. This type of zero-rating has been prohibited by the Dutch telecom authority in the T-Mobile case.
3. **A zero-rating offer in which the use of an *individual application within a certain category* does not count as data usage**. This type of offer creates a strong incentive for the consumer to use this particular application instead of other, competing ones. Also, it interferes with the competition between application providers within a certain category^{cxvi}. Consequently, BEREC considers this type of offer more likely than offers under category (2) to result in the situation that “end-users’ choice is materially reduced in practice”^{cxvii}. Interestingly, the Belgian telecom authority has allowed this type of zero-rating under the BEREC Guidelines (see section 1.5.3).

This thesis focuses on zero-rating offers that belong to category 2 or 3, because the zero-rating offers that belong to category 1 amount to technical discrimination which is by definition not allowed under the BEREC Guidelines^{cxviii}. With respect to category 2 and 3, BEREC lists various factors in its Guidelines that should serve as touchstones in the case-by-case assessment of a particular zero-rating offer and the extent to which the offer limits end users' rights to open internet access. I will now turn to these factors. It will become clear that these factors are mostly economic in nature.

3.2 The impact on the range and diversity of music streaming applications

When a national telecom authority evaluates whether the zero-rating of certain music streaming applications materially reduces end-users' choice in practice, it should be investigated to what degree the particular form of zero-rating restricts *the range and diversity of applications that consumers can choose from* via a mobile internet connection^{cxix}. This part of the assessment thus consists of two elements. First, a national telecom authority should investigate how the choice of the consumer between the available music streaming applications is impacted by the particular form of zero-rating. Secondly, a national telecom authority should assess how the zero-rating offer impacts the choice of consumers between music streaming applications and other categories of applications, such as video streaming applications. In this context, it is important to note that BEREC states that not every zero-rating offer, which *affects* the choices of consumers, also necessarily *limits* the right of consumers to open internet access^{cxx}. If the range and diversity of applications from which consumers can choose is *materially reduced* in practice, then it should be concluded by a national telecom authority that the right of end-users to open internet access is limited^{xxxi}.

3.2.1 The freedom to use and provide the applications of your choice

3.2.1.1 The relation between the two freedoms

The freedom of consumers to choose what applications they want to use, is part of the right to open internet access, as guaranteed by the Net Neutrality Regulation^{cxixii}. In my interpretation, this freedom of consumers is inextricably linked to the right of application providers to provide the applications of their choice – which is also part of the right to open internet access^{cxixiii}. For example, if the freedom of consumers to use the music streaming application of their choice is limited, then this inevitably has an impact on the range and diversity of music streaming applications that the application providers are capable of (successfully) providing to the market^{cxixiv}. It also works the other way around: if the right to provide music streaming applications is limited, then there will inevitably be an effect on the range and diversity of music

streaming applications that consumers can choose from. In other words, the right to use applications and the right to provide applications are two sides of the same coin.

3.2.1.2 *The freedoms and the preservation of the internet ecosystem*

Whether the effect of a particular zero-rating offer on the range and diversity of applications constitutes a *material reduction* of (1) the application provider's freedom to provide the application of its choice and (2) the consumer's freedom to use the application of its choice, has to be evaluated on a case-by-case basis. It is obvious, however, that it is difficult for a national telecom authority to establish whether the range and diversity of applications, available on the internet, is reduced in practice. For example, it is hard to find out whether applications would have been developed if the zero-rating offer would not have been launched on the market in the first place. Therefore, in order to effectively protect the range and diversity of applications in the internet ecosystem, the evaluation under the BEREC Guidelines should not only take into account the *observed reduction* of the range and diversity of applications, but also the *potential reduction* that the zero-rating offer causes. The assessment of the effects of a zero-rating offer on the range and diversity of applications, available via mobile internet access, has to be understood in the light of the general goals that the EU legislator pursues with the Net Neutrality Regulation^{CXXV}. The importance of the range and diversity of applications can be traced back to the general aim of the Regulation to "guarantee the continued functioning of the internet ecosystem as an engine of innovation"^{CXXVI}. In line with the goal of promoting innovation on the internet, it is the intention of the Commission behind the Net Neutrality Regulation to ensure that start-up companies are "able to compete on an equal footing with larger players"^{CXXVII}. This is why BEREC also mentions (1) the extent to which application providers are deterred from entering the market, or even pushed out of the market^{CXXVIII}, (2) the "other material harms to competition"^{CXXIX} in the particular market of applications, and (3) the extent to which an IAP functions as a gatekeeper on the particular market of applications, as relevant factors for the assessment of zero-rating^{CXXX}. The reason is that healthy competitive dynamics and the entrance of new players on the market of applications stimulate innovation by both incumbents and start-ups on these markets, which increases the range and diversity of applications that is available via mobile internet. In other words, creating the right conditions for the internet to function as an "ecosystem for innovation" can't be seen separately from the freedom to provide and choose from a range and diversity of applications.

3.2.1.3 *Zero-rating one application versus an entire category*

The BEREC Guidelines mention that the zero-rating of one single music streaming application provides for a strong economic incentive to use that specific application over other

applications^{CXXXI}. As a result, zero-rating applied to one single application is more likely, as compared to zero-rating of an entire class of applications, to harm “the continued functioning of the internet as an engine of innovation”^{CXXXII}. For example, if one single application within the “category of music streaming applications” is zero-rated, then the zero-rated music streaming application gains a competitive advantage over all other applications, which results in the risk that the range and diversity of both music streaming and other categories of applications is harmed. However, if the entire “category of music streaming applications” is zero-rated, then this might ‘merely’ lead to a distortion of the fair competition between music streaming applications and other categories of applications, such as video streaming. In the T-Mobile case the zero-rating offer is open to the entire category of music streaming applications.

3.3 The market positions of the IAP and the application providers involved

In the context of the investigation of zero-rating practices, a national telecom authority should take into consideration the market position of the IAP and the providers of applications involved^{CXXXIII}. BEREC considers it, *ceteris paribus*, more probable that the right to open internet access is limited if an IAP or an application provider involved has a strong rather than a weak market position on the relevant market^{CXXXIV}. In the case of dominant market positions, the range and diversity of applications on the internet is more likely to be harmed by a zero-rating offer.

3.3.1 The application of EU competition law

The BEREC Guidelines state that these market positions should be established on the basis of competition law principles^{CXXXV}. Therefore, EU law on abuse of dominant positions, as well as the law of the EU Merger Regulation, have to be used as a starting point for the analysis of the respective market positions. Before it can be established whether a certain company has a dominant position under EU competition law, the relevant product and geographic market have to be established^{CXXXVI}. The relevant product market is defined with the help of demand substitutability (i.e.: will consumers switch to another product or service if, for example, the price increases?),^{CXXXVII} as well as supply substitutability (i.e.: can a producer or service provider enter a market immediately and against negligible costs by adaptation of its facilities?)^{CXXXVIII}, whereas the relevant geographic market consists of “the area in which the undertakings concerned are involved in the supply and demand of products or services, in which *the conditions of competition are sufficiently homogeneous*”^{CXXXIX}. In the next sections, both the market for mobile internet access and the market for the provision of applications will be analyzed – to the extent necessary for the analysis of this thesis.

3.3.2 The market positions of IAPs in the EU

An IAP concerns a party that provides “mobile internet with data services and access to content via a mobile network”^{cxli}. From an EU competition law perspective, the relevant market on which IAPs, such as T-Mobile Netherlands, operate concerns the national market for the provision of telecommunications services to end-users^{cxlii}. Currently, four IAPs (i.e.: KPN, Vodafone, T-Mobile and Tele2) are active on the Dutch market. It has been found by a report of the OECD that four players or more on the market for mobile internet access is sufficient from a competition point of view^{cxliii}. On top of that, the threshold of four players is supported by economic studies, which show that a smaller amount of players would drive up prices for mobile internet access services^{cxliii}. Other economic research shows, on the other hand, that a market with less players could – under certain conditions^{cxliv} – stimulate innovation on the market, because in a more concentrated market IAPs would be better able to recoup their fixed costs accompanied with the investments in networks^{cxliv}. Further, in the context of the Dutch market for mobile telecommunication services, the Commission even approved a merger between two players in 2007, which back then resulted in a total of three players on the market. An important argument of the Commission for this decision was that the presence of so-called Mobile Virtual Network Operators (i.e.: mobile operators that do not own spectrum or have their own infrastructure)^{cxlvi} would leave sufficient competitive pressures on the market^{cxlvii}. It is beyond the scope of this thesis, however, to go more deeply into the discussion about the optimal amount of IAPs on the market. On the basis of the considerations above, this thesis therefore makes the assumption that the market for mobile internet access is sufficiently competitive and that there are no IAPs with a dominant position as long as an EU Member State has four or more players on the market for mobile internet access. Furthermore, when assessing the scale of the zero-rating practice or agreement and the presence of alternatives, as required by the BEREC Guidelines^{cxlviii}, the amount of IAPs that consumers can choose from are considered sufficient if the particular Member State has four or more players. See Appendix B for an overview of the amount of IAPs per EU Member State.

3.3.3 The concept of “a category of music streaming applications”

As the BEREC Guidelines distinguish between the zero-rating of one single application and the zero-rating of an entire category of applications, it is important to establish how a category of applications should be delimited. However, the exact boundaries of for example “a category of music streaming applications” are left unclear by the BEREC Guidelines. This thesis therefore bases the scope of this concept on the boundaries of the relevant product market. In other words, the definition of the “music streaming application market” determines whether an application falls into the “category of music streaming applications”. The reason for that is that

the BEREC Guidelines in any case also require a determination of the market position of the application providers involved^{cxlix}. Therefore, it seems most logical to combine those two elements and base the definition of a “category of music streaming applications” on the relevant product market definition. At the EU level market definitions are determined by the Commission on the basis of a market analysis. Furthermore, the degree of demand and supply substitution of certain products or services, which is relevant for the product market definition (see section 3.2), is indicative for the extent to which the companies of certain products or services are in a competitive relationship with each other^{cl}. The parallel with the BEREC Guidelines is that BEREC also places emphasis on the importance of the degree of competition between the respective providers of applications in the context of the assessment of zero-rating^{cli}. As a result, it seems logical to apply the factors relevant for the definition of “the music streaming application market” *by analogy* to the definition of “a category of music streaming applications”.

3.3.4 The market for the provision of applications

3.3.4.1 The delimitation of the market for the provision of applications

In what way the relevant market for the provision of applications should be delimited, depends on the type of applications concerned. For example, the market for the provision of music streaming applications has to be regarded as a separate relevant market that has to be distinguished from the product market for physical music, the product market for the provision of video streaming services and the product market of illegal (digital) music^{clii}. However, the market for the provision of music streaming applications belongs to the same product market as the market for the downloading of digital recorded music^{cliii}. Furthermore, it can be argued that the said market is national in scope. Since subscriptions with online services or applications like Spotify, and the content that can be accessed through such subscriptions, still largely differ per EU member state^{cliv}, it seems logical to assume that the geographic market for the provision of music streaming applications is national in scope.

3.3.4.2 The dynamics on the market for the provision of applications

The market for the provision of applications is a technology market, which forms part of the so-called ‘New Economy’^{clv}. Technology markets are very dynamic as they are characterized by fast technological developments. Consequently, technology markets are reported to be a so-called ‘winner-takes-all market’, in which the winner gets the largest share of the pie^{clvi}. These winner-take-all markets can arise when there are, for example, significant economies of scale and/or network effects. Markets in which the ‘winner takes all’ are often represented by a

disproportionate relationship between absolute achievements (e.g.: innovation) and rewards (e.g.: market shares)^{clvii}. In other words, in these market dynamics the provider of a slightly better application ‘owns’ the largest share of the market. Thus, relative rather than absolute achievements are often decisive for success in the context of a technology market^{clviii}. For example, a leaked study by market research institute GfK^{clix} seems to confirm the expectation that the market for music streaming applications can be regarded as a ‘winner-takes-all market’, as this study shows that the largest player (Spotify) has a market share of 86% in the Netherlands, while the second largest player (Apple Music) has a market share of only 9%.

3.3.4.3 The assessment of market positions of application providers

Since technology markets are very dynamic, market positions can be very fragile and transitory^{clx}. When a dominant firm on a technology markets does not succeed in maintaining its innovative advantage over its competitors, it will risk that a slightly more innovative firm takes over its dominant position. As a result of this persistent threat of ‘creative destruction’, technology firms are under a constant pressure to innovate^{clxi}. This strong emphasis on innovation, and the strong market dynamics that result from it, require a different approach from authorities towards technology markets as compared to the more traditional markets^{clxii}. For example, whereas a monopoly position on a traditional market might require intervention from the competition authorities, a monopoly position on a technology market might demand a more cautious approach, because such a monopoly is more likely to be temporary in nature^{clxiii}. Besides, some scholars argue that market shares are less indicative for a market position on technology markets than they are for the more traditional markets^{clxiv}. This reasoning has been followed by the Commission in the *Microsoft/Skype*^{clxv} and the *Facebook/Whatsapp* case^{clxvi} in the context of the consumer communications sector. The Commission argued in *Microsoft/Skype*, for example, that market shares in the consumer communications services market “provide a limited indication of competitive strength”^{clxvii}, because it concerns a dynamic market in which “market shares can change quickly within a short period of time”^{clxviii}.

Since market shares are less indicative for market positions on technology markets, “other factors indicating dominance”^{clxix} (i.e.: barriers to entry and expansion) become more relevant for the assessment of market positions^{clxx}. The potential threat of entry and expansion by competitors is important when determining whether a company holds a dominant position on the market, as potential entry and expansion can discipline the respective company (e.g.: to prevent the company to increase its prices)^{clxxi}. Interestingly, the BEREC Guidelines also mention barriers to entry for application providers as a relevant factor for the evaluation of zero-rating^{clxxii}. Barriers of entry and expansion, relevant for the assessment of the market position of application providers, include economies of scale, access to key inputs (e.g.: intellectual

property rights), the amount of profits made by the provider, the application provider's own assessment of its position, network effects (i.e.: the value of the application increases with the amount of users) and multi-homing (i.e.: the phenomenon that mobile phone users have the possibility to install and use more than one application on their phone, which gives the users the possibility to experiment with other applications and switch to another application if they prefer that other application over the one they currently use)^{clxxiii}.

3.4 The size of the data bundle

The economic incentive to use the zero-rated applications over the non-zero-rated applications becomes stronger as the data cap becomes lower^{clxxiv}. Reportedly, the use of a high quality music streaming application with a 320kbps rate, such as Spotify Premium, requires something like 144MB^{clxxv} of data per hour. This data usage per hour is, of course, a larger share of the total data allowance when one has a cap of 500MB than when one has a cap of 10GB. As a result, the consumer with 500MB is pushed more strongly towards the use of the zero-rated app than the consumer with 10GB. In the T-Mobile example, the zero-rating offer is combined with a relatively large data bundle of 6GB. Therefore, the data size of the data cap is unlikely to be problematic in the T-Mobile example.

3.5 The Belgian approach towards zero-rating

3.5.1 The arguments behind the Belgian approach

As mentioned in Chapter 1, the Belgian Telecommunications Authority, BIPT, has taken the position that zero-rating offers from a Belgian IAP, Proximus, in which the consumer can choose one out of six popular applications does not limit the rights of end-users under the Net Neutrality Regulation^{clxxvi}. As brought forward in subsection 3.1.2, the BEREC Guidelines lay down that zero-rating one single application is more likely to limit the rights of end-users than zero-rating an entire category of applications^{clxxvii}. Although BIPT acknowledges that zero-rating one application is more problematic under the BEREC Guidelines, the authority still comes to the conclusion that the zero-rating deals of Proximus are in line with the BEREC Guidelines^{clxxviii}. Important arguments to support its position are (1) multi-homing (i.e.: the possibility for the user to install various applications on his or her smartphone and to be able to easily switch from one application to another) entails that zero-rating one favorite application does not mean that the consumer will stop using applications that are not zero-rated^{clxxix}, (2) zero-rating the favorite application of the consumer leaves more data available for the use of other applications^{clxxx}, (3) no reduction of the range and diversity of applications, available via mobile internet, had been observed until the moment that the report was made^{clxxxi}, and (4) the data

caps that are part of the zero-rating deals are sufficiently high^{clxxxii}.

3.5.2 The interpretation of the BEREC Guidelines by the Belgian authority

This assessment of BIPT contradicts the interpretation of the BEREC Guidelines as set out in section 3.2. In order to effectively protect the range and diversity of application in the internet ecosystem, the evaluation under the BEREC Guidelines should not only take into account the *observed reduction* of the range and diversity of applications, but also the *potential reduction* that the zero-rating offer causes. As mentioned in subsection 3.1.2, zero-rating one application induces a strong incentive for the consumer to use the zero-rated application instead of other applications. Therefore, the right of the consumer to use the application of his or her choice, as well as the right of the application provider to be able to supply applications via mobile internet, is very likely to be limited when zero-rating is applied to one single application^{clxxxiii}. Thus, BIPT fails to take the possible foreclosure effects of zero-rating one application (see Chapter 4) sufficiently into consideration. This loose approach of BIPT seems to correspond with the argument of the economists, being that zero-rating is unlikely to lead to foreclosure effects (see Chapter 4).

3.6 Concluding remarks

In this chapter, I have sought to clarify the factors, as listed in the BEREC Guidelines, which have to be taken into account by national telecom authorities in the EU when assessing whether a particular zero-rating deal limits the end-user's right to open internet access. From the analysis it followed that the impact of a particular zero-rating offer on the range and diversity of applications, available via mobile internet access, can be considered as the common thread running through the entire assessment of zero-rating offers as required by the BEREC Guidelines. The impact on the range and diversity of applications depends on the extent to which application providers are capable of (successfully) providing applications to the market and thus on the freedom of consumers to use the application of their choice. These two freedoms must be seen in the light of the general aims of the Net Neutrality Regulation to protect the internet ecosystem as an engine of innovation. The effect of zero-rating on the range and diversity of applications depends on the strength of the economic incentive, resulting from the zero-rating deal, for the consumer to use certain applications over others. The magnitude of the economic incentive is, in turn, evaluated on the basis of economic criteria, such as the market position of the IAPs and application providers involved and the size of the data cap which is offered to the consumer in combination with the zero-rating deal.

Generally speaking, the zero-rating of one single application is not allowed under the BEREC

Guidelines, while the zero-rating of the entire category of applications is unproblematic under the BEREC Guidelines. The market positions of application providers will in general not lead to a different conclusion^{clxxxiv}, as these providers operate on technology markets for which the Commission has a more loose assessment of market power than on traditional markets. Besides that, I expect that the number of IAPs (in Europe ranging from 3 to 5) does not give rise to a prohibition of a zero-rating deal in which the entire category of applications is zero-rated^{clxxxv}. Another factor which is important in the assessment of zero-rating under the BEREC Guidelines, is the size of the data cap which is combined with the zero-rating deal^{clxxxvi}. As zero-rating is often used by IAPs to push consumers to larger data bundles, it can be expected that the size of the data cap is in most cases unlikely to make the zero-rating offer problematic.

From the analysis throughout this chapter, it can be derived that the assessment of zero-rating places a lot of emphasis on economic considerations rather than considerations based on internet freedom. Although the BEREC Guidelines mention the relevance of the freedom of expression and information, as well as media pluralism in a footnote^{clxxxvii}, the evaluation under the BEREC Guidelines is mostly economic in nature. The Belgian telecom authority gives the legally wrong interpretation of the BEREC Guidelines, because the Belgian telecom authority only takes into account *observed reduction* of the range and diversity of applications, while the BEREC Guidelines also require to take account of the *potential reduction* that the zero-rating offer causes. In the next chapter it will be analyzed whether the BEREC Guidelines or the Belgian approach towards zero-rating embody the most desirable legal approach towards zero-rating, to be adopted by the EU legislator, from an internet freedom and economic perspective.

Chapter 4: The search for the most desirable regulatory approach towards zero-rating

In this chapter the findings of the different chapters will come together. In the previous chapters, the EU legal framework (see Chapter 2), the former Dutch legal framework (see Chapter 2), the evaluation of zero-rating under the BEREC Guidelines (see Chapter 3) and the report on zero-rating from the Belgian telecom authority (see Chapter 3) have been discussed. As has been brought forward in Chapter 1, various regulatory approaches by national telecom authorities towards zero-rating co-exist in the EU. Whereas the Dutch telecom authority has taken a strict position on zero-rating in the T-Mobile case (see Chapter 2), the Belgian telecom authority allows the zero-rating of one application under the BEREC Guidelines. The interpretation of the BEREC Guidelines, as provided for in Chapter 3, is situated somewhere between these two extremes. This chapter analyses and compares these different regulatory approaches towards zero-rating in the EU from two perspectives: an internet freedom and economic point of view. From that comparison, the most desirable legal approach towards zero-rating, to be adopted by the EU legislator, is derived. It is argued that the different regulatory approaches towards can be traced back to *different understandings* of the desirability of net neutrality as an innovation policy objective. Resulting from the different perspectives on the desirability of net neutrality as a policy objective, different standpoints on zero-rating exist. This thesis distinguishes between those who place emphasis on the importance of (a strict reading of) net neutrality and the threat that zero-rating poses to internet freedom and fair competition on the internet (“the net neutrality advocates”), and those who have a more pragmatic approach towards net neutrality and call for a purely economic analysis of zero-rating offers (for the purpose of this thesis: “the economists”). In this chapter, I will take a position of my own in the zero-rating debate.

This chapter is structured as follows. Firstly, the various arguments of the net neutrality advocates against zero-rating are brought forward (section 4.1). Secondly, the arguments of the economists in favour of zero-rating are discussed (section 4.2). Thirdly, the most desirable regulatory approach towards zero-rating is established on the basis of the position taken in the zero-rating debate (section 4.3). Finally, I will shortly discuss the future relevance of zero-rating offers in the EU (section 4.4).

4.1 The arguments of the net neutrality advocates against zero-rating

Net neutrality advocates, such as Barbara van Schewick, argue that the practice or agreement of not counting the use of certain applications towards the data cap should be prohibited for reasons of principle, because the said form of zero-rating *constitutes by definition*

discrimination between different applications. In this line of reasoning, no distinction should be made between technical and commercial discrimination, because the discriminatory effects are in both cases the same: certain applications are favoured over others and that leads to a distortion of competition between application providers and the development of (new) applications on the internet^{clxxxviii}. This line of reasoning is arguably behind the introduction of a total ban on zero-rating by the Dutch legislator (see Chapter 2). In the next sections, I will elaborate on various arguments made by the net neutrality advocates against zero-rating.

4.1.1 Zero-rating induces foreclosure effects

One of the central issues in the debate between net neutrality advocates and the economists about zero-rating is the foreclosure effects that zero-rating might bring about^{clxxxix}. The concern of net neutrality advocates is that IAPs will use their power over the network to pick winners and losers on the market for the provision of mobile applications^{cxc}. The idea of net neutrality is that IAPs should not favour some applications over others, because that could lead to a situation where IAPs function as gatekeepers of the internet in the sense that they determine which application becomes successful and which one does not^{cxc}. Since zero-rating favours certain applications (i.e.: mostly popular applications) over others (i.e.: applications from small or new application providers), zero-rating might eventually lead to the exclusion of certain applications^{cxcii}. The excluded applications mostly represent certain content, which is directed to certain consumer groups. Therefore, zero-rating potentially disadvantages or even excludes certain categories of speakers, such as non-commercial, low-cost and ‘niche’ speakers and creatives^{cxciii}. Although it is beyond the scope of this thesis to go into the fundamental rights discussion in detail, net neutrality advocates have expressed their worries about the resulting impact of zero-rating on the freedom of expression and information^{cxciv}.

4.1.2 The costs of zero-rating harm small application providers and consumers

It is important to distinguish between zero-rating for which the joining application provider has to pay (“sponsored data”) and those forms of zero-rating, which are carried out by the IAP without charging the application providers for it (“carrier initiated”)^{cxcv}. As mentioned in section 4.1, “sponsored data” schemes give the IAP an incentive to lower the data cap in order to make it more attractive for providers of applications to pay for the zero-rating of their applications. Besides that, the threshold for participating in such schemes is higher for start-ups and small companies, because it is more difficult for these smaller players to afford the payment, which is required to join such zero-rating schemes. As a result, the harms to competition and entry on the market for the provision of applications are larger in case of “sponsored data” than when zero-rating schemes are “carrier initiated”^{cxcvi}. Furthermore, the application provider will seek

to compensate those costs if the application provider has to pay to participate in a zero-rating program. Therefore, the costs of joining the zero-rating scheme are eventually passed on to the consumer in the form of – for example – more (aggressive) advertising or higher subscription fees for the zero-rated application^{CXCvii}.

4.1.3 Zero-rating comes along with technical requirements

Even if zero-rating is “carrier initiated”, then still zero-rating creates barriers to application development. Besides possible payments, being part of a zero-rating scheme requires from application providers that their applications meet certain technical specifications^{CXCviii}. These technical requirements are imposed on application providers in order for the IAP to be able to distinguish the zero-rated traffic from the traffic that is not zero-rated^{CXCix}. These technical requirements might be more difficult to meet for start-ups and small application providers than for incumbent and large application providers, both in terms of money and technical knowledge^{CC}. So these technical requirements, on top of the possible payments that are required in case of “sponsored data” and possible other barriers to participate^{CCi}, create an additional obstacle for new and small application providers to effectively compete against incumbent and large application providers. Again, this might impede the development of applications on the internet and therefore harm the range and diversity of applications that consumers can choose from via their mobile internet connection. Another objection against these technical requirements is that they might exclude application providers that use more innovative protocols for their applications^{CCii}. For example, there have been zero-rating schemes that did not allow application providers to use the User Datagram Protocol (UDP) for their video streaming applications, while this protocol is known to improve the quality of video streaming services^{CCiii}. Thus, technical requirements might stifle innovation on the market for the provision of applications.

4.1.4 Zero-rating leads to lower data caps

Most consumers in the EU are restricted in the amount of data that they can use to experience the internet via their mobile phones. These data caps, although considered by some to introduce artificial scarcity^{CCiv}, help the IAP to allocate the scarce network capacity in an efficient way. More specifically, data caps enable the IAP to provide the network resources to those who ‘need’ it most (i.e.: the largest data bundles are sold to the consumers with the highest willingness to pay)^{CCv}. Besides that, data caps ensure that the IAP is better capable of planning and predicting data usage in order to prevent congestion on the network^{CCvi}. Reportedly, there is a relationship between (1) the existence of zero-rating deals in which certain applications are zero-rated while others are not, and (2) the size of the data cap that the

IAP offers to the consumer. For example, Digital Fuel Monitor has reported that in the Netherlands KPN doubled the data caps it provided to consumers from 5GB to 10GB after the Dutch regulator prohibited IAP to zero-rate their own applications^{ccvii}. Another study of Digital Fuel Monitor confirms this finding by showing that for various EU countries the zero-rating of the IAP's own application led to a lower data cap for consumers^{ccviii}. The explanation for these findings is that IAPs, which zero-rate their own application, have an incentive to reduce data caps in order to steer the consumer more strongly towards the use of their own application^{ccix}. Arguably, however, the incentive to lower data caps is also present when the IAP does not zero-rate its own applications, but instead zero-rates the application(s) of other application provider(s)^{ccx}. Namely, lower data caps make it more attractive for consumers to use zero-rated applications instead of the ones which are not zero-rated. Therefore, lower data caps make it more attractive for application providers to join the zero-rating schemes. Besides, in case of "sponsored data" (see subsection 4.1.2), an IAP is likely to get paid more by application providers when the data cap is lower, because it becomes more attractive to join the zero-rating scheme^{ccxi}. Note, however, that although it becomes more attractive to join a zero-rating scheme when data caps are lower, the application providers with insufficient technical and financial resources might not be able to participate (see subsection 4.1.2-4.1.3).

4.2 The arguments of the economists in favour of zero-rating

In the previous section, the various arguments of the net neutrality advocates against zero-rating have been brought to the table. However, in the literature about zero-rating and net neutrality various arguments are made by the economists in favour of zero-rating. In the next sections it is shown that these arguments are largely misplaced, because these arguments either (1) make the wrong assumptions about the behavioural incentives for IAPs or (2) apply a line of reasoning that applies to developing rather than developed countries.

4.2.1 The potential foreclosure effects of zero-rating are overestimated

4.2.1.1 Zero-rating as a means to gain popularity

As brought forward in subsection 4.1.2, the central concern of net neutrality advocates with respect to zero-rating offers is that the agreements or practices benefit certain (i.e.: mostly large and incumbent) application providers over other (i.e.: mostly small and new) application developers. An important assumption behind this argument is that it is easier for large application providers to be part of a zero-rating scheme than for small players^{ccxii}. As a result, zero-rating deals primarily strengthen the market position of large application developers, which makes it more difficult for new players to enter the market and for small application

providers to further develop themselves^{CCXIII}. However, some economists have argued that new and small application providers can also join zero-rating schemes in order to become more visible and well-known among consumers^{CCXIV}. Some zero-rating offers indeed have been reported to be used by small players as a means to gain popularity among consumers^{CCXV}. In fact, the zero-rating deal, as offered by T-Mobile in the Netherlands, is open for and has actually been joined by both large and small music streaming application providers^{CCXVI}. This consideration might mitigate the foreclosure effects as discussed in subsection 4.1.1. On the other hand, IAPs do have the incentive to zero-rate their own or popular applications instead of the applications of new or small application providers^{CCXVII}.

4.2.1.2 The incentive for IAPs to preserve the internet ecosystem

There is an important assumption underlying the argument of the economists that the foreclosure effects of zero-rating are overestimated. Namely, the assumption is that the IAP has an interest to make sure that the range and diversity of applications, available via mobile internet, is preserved^{CCXVIII}. In other words, the IAP has an incentive to guarantee that new and small application providers have a fair chance on the market. Since applications are complementary to mobile internet access, a reduction of the range and diversity of applications would make the internet access service less attractive to consumers. As a result, it is not in the long-run interest of an IAP to bring a zero-rating offer to the market if the zero-rating would harm the range and diversity of applications. According to the economists, this reasoning would be especially true when the market for mobile internet access is sufficiently competitive^{CCXIX}. This assumption, however, does not seem convincing, because it seems more realistic that companies are rather interested in their short-term interest of maximizing profits and their own survival on the market^{CCXX}, instead of the long-term interest of conserving the range and diversity of applications on the internet^{CCXXI}. From practice it can be seen that IAPs rather have the incentive to – first – zero-rate their own applications or the applications of popular players, such as Facebook and Whatsapp, as these types of zero-rating protect the short-term interests of IAP in the best way^{CCXXII}. Thus, zero-rating is indeed likely to lead to the foreclosure of small and new application providers.

4.2.2 Zero-rating as a means to increase internet connectivity

As brought forward in Chapter 1, zero-rating can take many forms and has different meanings depending on the context. Zero-rating offers in developing countries, such as Wikipedia Zero, might promote mobile internet access in developing countries^{CCXXIII}. Mobile broadband penetration rates are relatively low in the developing world and the zero-rating offers, such as Wikipedia Zero, might make mobile internet subscriptions affordable for people that otherwise

would not be able to pay for mobile internet access^{CCXXIV}. In the EU, however, a substantial share of the population already has access to the internet^{CCXXV}. Although zero-rating might slightly increase mobile internet adoption in the EU^{CCXXVI}, zero-rating offers in the EU are first and foremost a way for the IAP to compete for consumers^{CCXXVII} and to stimulate consumers to upgrade their data plans^{CCXXVIII}. In other words, zero-rating is a means to differentiate the mobile internet access service for IAPs.

4.2.3 Zero-rating as a way to differentiate the service

In the last subsection, I have already shortly mentioned that zero-rating is a way for an IAP to differentiate the internet access service in the competition with other IAPs. From the perspective of the economists, zero-rating can be regarded as an “innovative pricing strategy”, conducted by the IAP, which promotes competition on the market for mobile internet access and thus increases consumer welfare^{CCXXIX}. By the economists zero-rating is also considered to be a form of “competitive price discrimination”^{CCXXX}. In other words, zero-rating is a means for the IAP to target consumer with a lower willingness to pay and, as a consequence, to serve a larger share of the market. The market for internet access is characterized by high fixed costs, resulting from high investments in infrastructure and R&D. Price discrimination makes it easier for the IAP to recoup these fixed costs^{CCXXXI}. As a result, the opportunity of bringing zero-rating offers to the market strengthens the incentive for IAPs to engage in risky investments in infrastructure and R&D in the first place. Therefore, zero-rating stimulates innovation on the market for mobile internet access – so the reasoning goes.

In my opinion, the argument explained above fails to distinguish between different sizes of data bundles and zero-rating. IAPs target consumers with a relatively low willingness to pay by offering relatively small data bundles against a relatively low price. Many zero-rating offers, on the other hand, target consumers with a relatively high willingness to pay rather than consumers with a relatively low willingness to pay: zero-rating offers are often part of relatively expensive data plans^{CCXXXII}. It is true, however, that zero-rating increases the incentive to invest in infrastructure and R&D to the extent that these offers push consumers to more expensive data plans, as the increase in sales of more expensive data plans leads to higher returns for IAPs. These higher returns, in turn, strengthen the incentive for IAPs to engage in risky investments. It has to be noted though that the higher returns for IAPs might be at the expense of the surplus of consumers with a relatively high willingness to pay, because they are pushed to buy more expensive data plans^{CCXXXIII}. The extent to which zero-rating leads to higher returns for IAPs at the expense of certain consumers is arguably mitigated in a sufficiently competitive market, such as the one for mobile internet access (see Chapter 3), because sufficient competition on the market^{CCXXXIV} drives down prices for mobile internet access services^{CCXXXV}.

Besides the fact that zero-rating deals are used to push consumers to upgrade their data plans, zero-rating offers in the EU have to be seen as a way for an IAP to lure away consumers from other IAPs^{CCXXXVI}. Consequently, zero-rating offers that successfully take away consumers from other IAPs, increase returns for one IAP but lower the returns for other IAPs. It might be true that in countries with a relatively low mobile internet penetration rate, such as many countries in the developing world, zero-rating offers can indeed lead to higher mobile internet adoption (see subsection 4.2.2), and therefore higher returns for IAPs. However, as has been noted in subsection 4.2.2, all EU countries already have high internet penetration rates and, as a consequence, zero-rating will generally not lead to a significant increase in internet adoption in the EU.

4.2.4 Zero-rating promotes network effects

Some of the economists have argued that zero-rating should be encouraged as it increases the value of applications through network effects^{CCXXXVII}. In the example of the T-Mobile case, zero-rating Spotify for example increases the value of Spotify as a platform. Spotify is used as means of ‘music discovery’: the playlists of friends contributes to the discovery of new music by the user, which increases the attractiveness of the platform (i.e.: direct network effects)^{CCXXXVIII}. Secondly, the more people make use of Spotify, the more attractive it becomes for authors to conclude licensing agreements with Spotify in order to make their music available on the platform (i.e.: indirect network effects)^{CCXXXIX}. As a result, a larger the amount and/or diversity of music that becomes available on the platform, which makes Spotify – in turn – more attractive to (potential) users. However, it should be noted that direct and indirect network effects also strengthen the market position of Spotify (see Chapter 3), which makes the particular zero-rating offer more problematic. Namely, the more popular the zero-rated application is, the stronger the potential foreclosure effects of the zero-rating. Note that the magnitude of network effects, and thus the strength of the arguments made above, differs among different categories of applications. For example, direct network effects are probably stronger for social media applications, such as Facebook, than for music streaming applications, such as Spotify, because being able to follow and contact your friends is probably a more important element of the (value of the) Facebook application.

4.3 The regulatory positions in the zero-rating debate

As shown in the section 4.1, zero-rating is at the risk of causing various negative effects, including the exclusion of certain applications and content from the internet, more aggressive advertisements for consumers, technical requirements for application providers and lower data

caps for consumers. As shown in section 4.2, the arguments of the economists are largely misplaced. Namely, (1) zero-rating is in practice mostly applied to large or dominant application providers, (2) IAPs focus on their short term interest of surviving on the market rather than preserving the range and diversity of applications on the internet, (3) zero-rating will not significantly increase internet connectivity in EU countries, (4) zero-rating is aimed to push consumers to more expensive data plans and (5) zero-rating strengthens network effects and thus market positions of providers of zero-rated applications. Based on the analysis of the arguments of both net neutrality advocates and the economists, this thesis takes the position of the net neutrality advocates that zero-rating is likely to be harmful from an internet freedom and economic point of view. I will now turn back to the different legal and regulatory approaches to investigate which approach is the most desirable from the perspective of the net neutrality advocates.

4.3.1 The Net Neutrality Regulation: a compromise between two perspectives

The economic rationale behind the perspective of the net neutrality advocates on zero-rating is that favouring some applications over others distorts the competition on the market for the provision of applications, and thus harms the future development of applications^{ccxi}. Traces of this reasoning can also be found back in the Net Neutrality Regulation, since the Regulation acknowledges the relationship between (1) the non-discriminatory treatment of traffic in the provision of internet access services and (2) the internet ecosystem as an engine for innovation (see section 2.1)^{ccxii}. However, the Net Neutrality Regulation only lays down a categorical prohibition to treat internet traffic differently in technical terms, but does not categorically prohibit zero-rating (see section 2.9). In other words, zero-rating is not by definition prohibited under the Net Neutrality Regulation and is thus assumed by the EU legislator to be less harmful than forms of technical discrimination. Therefore, the Net Neutrality Regulation seems to lay down a compromise between the viewpoint of the economists on the one hand (i.e.: both commercial discrimination^{ccxlii} and technical discrimination^{ccxliii} are likely to be welfare-enhancing) and the viewpoint of net neutrality advocates on the other hand (i.e.: both commercial discrimination^{ccxliv} and technical discrimination^{ccxlv} are generally harmful).

4.3.2 The zero-rating of one application or an entire category of applications

The BEREC Guidelines give the basis to prohibit the zero-rating of one application (see Chapter 3). From the Belgian report on zero-rating it follows, however, that the BEREC Guidelines give leeway to national telecom authorities to interpret the Guidelines as if they allow zero-rating of one single application. In my opinion, these harmful forms of zero-rating should be prohibited as they accompany strong foreclosure effects. When it comes to zero-rating offers in which an

entire class of applications is zero-rated, the anti-competitive effects are less strong^{ccxli}. However, these forms of zero-rating still impose the risk that the competition between different classes of applications is harmed^{ccxlii}. Besides, the IAP has an incentive to zero-rate a category of applications, which is not in competition with its own applications^{ccxliii}. Finally, if zero-rating schemes are open to all applications in a certain category, it might still be more difficult for small and new players to join as compared to the large players on the market^{ccxliv}. In short, precaution to both types of zero-rating is required from the point of view of the net neutrality advocates^{cccl}.

4.3.3 The total ban of zero-rating

As brought forward in section 2.6, the Dutch total ban on zero-rating was motivated on the basis of two arguments. First of all, from an economic point of view a total ban on zero-rating is required as the total ban prevents that new and innovative parties are excluded from the market since incumbent companies are capable of offering their services more cheaply on the internet^{cccli}. Secondly, from an internet freedom perspective a total ban on zero-rating prevents that IAPs use the power over their networks in order to steer the choice of end-users between different apps and content^{ccclii}. Interestingly, the first argument of the Dutch legislator seems to reflect the concern of the net neutrality advocates that zero-rating might exclude new or small application providers from the market (see subsection 4.1.1 - 4.1.3). The second argument, on the other hand, seems to be the argument that it is undesirable from an internet freedom point of view that consumer behaviour is steered by (large) companies on the internet. In other words, the Dutch regulatory approach seems to do most right to the valid arguments of the net neutrality advocates.

The validity of the second (internet freedom) argument behind the total ban on zero-rating is strengthened when zero-rating is brought into a broader internet freedom context. This broader context is that in many different areas on the internet consumer behaviour is steered by (large) companies, such as Facebook and Google, which is at the detriment of internet freedom^{cccliii}. As formulated in the Net Neutrality Recommendation from the Council of Europe, EU citizens are increasingly dependent on internet access for the participation in a democratic society^{cccliv}. Since IAPs have the technical ability to control the dissemination of information through the internet networks, IAPs play an important role in safeguarding the right of EU citizens to receive and impart information of their choice when accessing the internet^{ccclv}. In other words, the power of IAPs to control their networks goes hand in hand with an important responsibility to not steer the behaviour of consumers in such a way that it potentially undermines the freedom of citizens to receive and impart information on the internet.

Finally, zero-rating can be seen as a sign that the capacity of networks of IAPs is improving^{cclvi}. If the capacity of the network could not handle the additional traffic caused by these zero-rating deals (i.e.: zero-rating would lead to excessive congestion on the network), then IAPs would not offer these zero-rating deals in the first place. Therefore, IAPs could prevent all the above explained (potential) harms of zero-rating by *providing higher data caps instead*^{cclvii}. The additional amount of data could be used by consumers to use the applications of their choice. As a result, consumer choice would not be limited, foreclosure effects would be prevented and internet freedom would be safeguarded.

4.4 The future of zero-rating in the EU: unlimited data and a public Wi-Fi network?

As mentioned in the former section, zero-rating deals are a sign of the increasing capacity of mobile networks. Consequently, zero-rating can be regarded as a step towards internet access services that comprise unlimited data for consumers. In fact, T-Mobile presents its “Data-free Music” service, which has been brought to the market in the Netherlands, as an offer in between a 5GB and an unlimited data bundle^{cclviii}. As a response to T-Mobile’s unlimited data offer, Tele2 has brought an even cheaper unlimited data deal to the Dutch market^{cclix}. Furthermore, in Finland unlimited data packages are already a common practice^{cclx}. Therefore, I expect that zero-rating can indeed be seen as a step on the road towards unlimited data. In other words, in the long-run, the relevance of zero-rating will disappear – at least in those developed countries that will experience a sufficient growth of efficiency of mobile networks in the upcoming years. Besides unlimited data bundles, the Commission has proposed the so-called “WiFi4EU” initiative, which seeks to promote free Wi-Fi in public places in the entire EU^{cclxi}. Although it remains seen whether this public EU Wi-Fi network will become reality in the future, it is yet another sign that the relevance of zero-rating offers might decline or maybe even disappear.

Chapter 5: Conclusion

This thesis has sought to find the most desirable legal approach towards zero-rating offers where the use of certain applications via mobile internet access is not counted towards the data cap. More specifically, this thesis has tried to arrive at the most desirable legal approach towards zero-rating, to be adopted by the EU legislator, from both an internet freedom and economic perspective. As has been shown in Chapter 2, the current Net Neutrality Regulation does not contain a categorical ban on zero-rating, but rather requires a case-by-case assessment as to whether a particular zero-rating offer limits the end-user's right to open internet access. Whereas the EU legislator categorically prohibits technical discrimination between different streams of internet traffic, the EU legislator does not impose the same restriction on commercial discrimination^{cclxii}. From this it can be derived that the EU legislator currently assumes that commercial discrimination, such as zero-rating, is less harmful than technical discrimination.

The Dutch legislator tried and failed to follow a more strict legal approach towards zero-rating offers than the EU legislator has chosen for in the Net Neutrality Regulation. The total ban on zero-rating, as introduced by the Dutch legislator, translated into the strict regulatory approach of the Dutch telecom authority in the T-Mobile case. A Dutch district court ruled that the Dutch law, containing the total ban on zero-rating, does not apply as the legal provision contradicts the Net Neutrality Regulation^{cclxiii}. While the strict Dutch legal and regulatory approach are legally incorrect under the Net Neutrality Regulation, this thesis investigated whether the total ban on zero-rating might be preferred from an internet freedom and economic perspective.

BEREC, a platform for national telecom authorities and the Commission in the EU, has issued Guidelines on the 30th of August 2016 which seek to give guidance as to how the national telecom authorities should evaluate zero-rating offers under the Net Neutrality Regulation^{cclxiv}. The national telecom authorities should investigate on a case-by-case basis whether a particular zero-rating offer limits (1) the right of application providers to offer applications on the internet and (2) the right of consumers to use the applications of their choice^{cclxv}. For that purpose, the national telecom authorities should assess the impact of a zero-rating offer on the range and diversity of applications available via mobile internet access. In the context of the assessment, national telecom authorities should take into account several mostly economic criteria, such as the market positions of IAPs and application providers involved, the size of the data bundle and the availability of alternative offers^{cclxvi}. Generally speaking, the zero-rating of one single application is not allowed under the BEREC Guidelines, while the zero-rating of an entire category of applications is allowed under certain conditions. The reason behind this is that the first type of zero-rating provides for a strong incentive to use the zero-rating

application over others, while the second type of zero-rating ‘merely’ distorts competition between different categories of applications^{cclxvii}. The Belgian telecom authority, however, has allowed the zero-rating of one single application under the BEREC Guidelines^{cclxviii}. This approach towards zero-rating is legally incorrect, as an assessment under the BEREC Guidelines should not only take into account the *observed reduction* of the range and diversity of applications, but also the *potential reduction* that the zero-rating offer causes. However, the position of the Belgian telecom authority seems to indicate that the BEREC Guidelines give leeway for allowing the zero-rating of one single application in the EU.

The diverse regulatory approaches, as adopted by BEREC, the Dutch telecom authority and the Belgian telecom authority, reflect different understandings of the desirability of “net neutrality” as an innovation policy objective. This thesis distinguished between those who place emphasis on the importance of (a strict reading of) net neutrality and the threat that zero-rating poses to internet freedom and fair competition on the internet (“the net neutrality advocates”), and those who have a more pragmatic approach towards net neutrality and call for a purely economic analysis of zero-rating offers (for the purpose of this thesis: “the economists”).

The most important concern of the net neutrality advocates with respect to zero-rating is the potential foreclosure effects that a zero-rating scheme brings about^{cclxix}. Namely, zero-rating favors certain applications over others, which can lead to the exclusion of certain applications and content from the internet. Besides, zero-rating deals accompany technical requirements and in some cases payment from application providers. These requirements are more difficult to meet for start-ups and small application providers, which leads to a harm to competition and innovation on the market for the provision of applications^{cclxx}. Furthermore, zero-rating gives the incentive to IAPs to lower data caps in order to push consumers more strongly towards the use of the zero-rated applications^{cclxxi}.

Most of the arguments of the economists in favor of zero-rating seem to be largely misplaced. In the analysis of this thesis, it has been shown that (1) zero-rating is in practice mostly applied to large or dominant application providers, (2) IAPs focus on their short term interest of maximizing profits on the market rather than preserving the range and diversity of applications on the internet, (3) zero-rating will not significantly increase internet connectivity in EU countries, (4) zero-rating is aimed to push consumers to more expensive data plans and (5) zero-rating strengthens network effects and thus market positions of providers of zero-rated applications.

The valid concerns of the net neutrality advocates require legal precaution towards zero-rating deals in the EU^{cclxxii}. While the foreclosure effects are obvious when the zero-rating of one

application is allowed (i.e.: the approach of the Belgian telecom authority), also the zero-rating of an entire category comes at the risk of distorting competition between different categories of applications^{cclxxiii}. When zero-rating is placed in the broader context of consumers already being steered in their behavior by (large) companies and the threat that these type of practices on the internet impose to internet freedom^{cclxxiv}, then the need for precaution towards zero-rating becomes even more apparent. This thesis argues that the power of IAPs to control their networks goes along with an important responsibility to not steer the behavior of consumers in such a way that it potentially undermines the freedom of citizens to receive and impart information on the internet. Finally, the argument of precaution becomes even stronger when it is taken into consideration that IAPs are able to prevent all the potential harms of zero-rating by providing higher data caps instead^{cclxxv}.

To conclude, the potential economic risks of zero-rating offers and the potential threat that zero-rating poses to internet freedom, requires legal precaution from the EU legislator. This precaution should take the form of a categorical ban on zero-rating offers where the use of certain applications does not count towards the data cap. In other words, the EU legislator should incorporate a total ban on zero-rating in the Net Neutrality Regulation. Only in this way, we can behold the future development of unlimited data packages and Wi-Fi network without taking the potential internet freedom and economic dangers of zero-rating for granted. Only in this way, we as a society ensure that we effectively protect the range and diversity of applications of the internet ecosystem against the risks of zero-rating.

Appendix A: Proposed amendment European Parliament

21.10.2015

A8-0300/10

Amendment 10

Michel Reimon

on behalf of the Verts/ALE Group

Marisa Matias, Cornelia Ernst, Rina Ronja Kari, Curzio Maltese, Martina Michels, Matt Carthy, Sofia Sakorafa, Kostas Chrysogonos, Luke Ming Flanagan

on behalf of the GUE/NGL Group

Recommendation for second reading

A8-0300/2015

Pilar del Castillo Vera

European single market for electronic communications

10788/2/2015 – C8-0294/2015 – 2013/0309(COD)

Council position

Article 3 – paragraph 2

Council position

2. Agreements between providers of internet access services and end-users on commercial and technical conditions and the characteristics of internet access services such as price, data volumes or speed, and any commercial practices conducted by providers of internet access services, shall not limit the exercise of the rights of end-users laid down in paragraph 1.

Amendment

2. Agreements between providers of internet access services and end-users on commercial and technical conditions and the characteristics of internet access services such as price, data volumes or speed, and any commercial practices conducted by providers of internet access services, shall not limit the exercise of the rights of end-users laid down in paragraph 1. ***This paragraph shall not prevent Member States from adopting additional regulations with regard to the practice of exempting certain content, applications, or services or categories thereof from data caps.***

Or. en

Justification

This amendment tries to accommodate the different positions of the three institutions and reflect the intention of the legislators. This amendment clarifies the position agreed within informal dialogues.

Appendix B: The number of IAPs per EU country

EU Country	Number of IAPs ¹
Austria	3
Belgium	3
Bulgaria	5
Croatia	3
Cyprus	3
Czech Republic	3
Denmark	5
Estonia	3
Finland	5
France	4
Germany	3
Greece	4
Hungary	4
Ireland	3
Italy	4
Latvia	4
Lithuania	5
Luxembourg	4
Malta	3
Netherlands	4
Poland	4
Portugal	3
Romania	4
Slovakia	4
Slovenia	4
Spain	4
Sweden	4
United Kingdom	4
<i>Average</i>	<i>+/- 3.8</i>

¹ The number of IAPs per EU country has been derived from various public sources on the internet.

Endnotes

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- ^{xxvii} Regulation (EU) 2015/2120, Article 3(3)
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^{lvi} Note that the Preamble mentions « inter alia ».

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^{cxx} *ibid* 12

^{cxxi} *ibid* 12

^{cxxii} Regulation (EU) 2015/2120, Article 3(1)

^{cxxiii} BEREC, 'BEREC Guidelines on the Implementation by National Regulators of European Net Neutrality Rules' (2016) BoR (16)127

<http://berec.europa.eu/eng/document_register/subject_matter/berec/regulatory_best_practices/guidelines/6160-berec-guidelines-on-the-implementation-by-national-regulators-of-european-net-neutrality-rules> accessed 27 November 2016

^{cxxiv} To illustrate this point, imagine that the consumer is limited in its ability to choose for other music streaming applications than Spotify. Consequently, developers of other music streaming applications than Spotify are limited in their ability to provide their music streaming application (successfully) to the market.

^{cxv} BEREC, 'BEREC Guidelines on the Implementation by National Regulators of European Net Neutrality Rules' (2016) BoR (16)127

<http://berec.europa.eu/eng/document_register/subject_matter/berec/regulatory_best_practices/guidelines/6160-berec-guidelines-on-the-implementation-by-national-regulators-of-european-net-neutrality-rules> accessed 27 November 2016

^{cxvii} Regulation (EU) 2015/2120, Preamble (1)

^{cxviii} Commission, 'Roaming charges and open Internet: questions and answers' (2016) MEMO 15(5275)

<http://europa.eu/rapid/press-release_MEMO-15-5275_nl.htm> accessed 17 January 2017

^{cxix} BEREC, 'BEREC Guidelines on the Implementation by National Regulators of European Net Neutrality Rules' (2016) BoR (16)127

<http://berec.europa.eu/eng/document_register/subject_matter/berec/regulatory_best_practices/guidelines/6160-berec-guidelines-on-the-implementation-by-national-regulators-of-european-net-neutrality-rules> accessed 27 November 2016

^{cxx} *ibid* 13

^{cxxi} *ibid* 13

^{cxxii} *ibid* 11

^{cxxiii} *ibid* 13

^{cxxiv} Regulation (EU) 2015/2120, Preamble 7

^{cxxv} BEREC, 'BEREC Guidelines on the Implementation by National Regulators of European Net Neutrality Rules' (2016) BoR (16)127

<http://berec.europa.eu/eng/document_register/subject_matter/berec/regulatory_best_practices/guidelines/6160-berec-guidelines-on-the-implementation-by-national-regulators-of-european-net-neutrality-rules> accessed 27 November 2016

^{cxxvi} *ibid* 12

^{cxxvii} Alison Jones and Brenda Sufrin, *EU Competition Law: Text, Cases, and Materials* (6th edn, OUP 2016) 291

^{cxxviii} *ibid* 291-292

^{cxxix} *ibid* 310

^{cx} European Commission, 'Commission Notice on the definition of relevant market for the purpose of Community competition law', OJ C 372 [1997]

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- ^{cxli} The wording “mobile internet with data services and access to content via the mobile network” has been derived from *Deutsche Telekom / GTS* (Case COMP/M.7109) OJ C 79 [2014]
- ^{cxlii} See *T-Mobile / Orange* (Case COMP/M.5650) OJ C 10 [2010] and *Deutsche Telekom / GTS* (Case COMP/M.7109) OJ C 79 [2014]
- ^{cxliii} OECD, ‘Wireless Market Structures and Network Sharing’ (2014) OECD Digital Economy Papers No. 242 <<http://oecdinsights.org/2014/11/06/what-difference-does-a-mobile-operator-more-or-less-make-to-you/>> accessed 3 June 2017
- ^{cxliiii} In Ron Kemp and Robert Still, ‘Vier is beter dan drie op de markt van de mobile telecommunicatie’ (2016) 101(4737) ESB, a price increase of mobile telecommunications services have been observed in the Netherlands, resulting from the merger between T-Mobile and Orange, which led to the existence of three mobile telecommunications service providers in the Netherlands. See for other economic studies that show similar price effects due to the change from four to three mobile telecommunications service providers, for example, Gergely Csorba and Zoltán Pápai, ‘Does one more or one less mobile operator affect prices? A comprehensive ex-post evaluation of entries in European mobile telecommunications’ (2015) 41 Hungarian Academy and Science Discussion papers, or Christos Genakos, Tommaso Valletti and Frank Verboven, ‘Evaluating Market Consolidation in Mobile Communications’ (2015) Brussels: Centre on Regulation in Europe
- ^{cxliv} Georges Vivien Hounghonon and François Jeanjean, ‘What level of competition intensity maximizes investment in the wireless industry?’ (2015) TPRC Conference Paper <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2416780> accessed 9 July 2017. This study finds that a merger of wireless operators can be beneficial for social surplus when profit margins of wireless operators are below a certain level (i.e.: below 35%).
- ^{cxlv} See also, Frontier, ‘Assessing the case for in-country mobile consolidation’ (GSMA, May 2015) <http://www.gsma.com/publicpolicy/wp-content/uploads/2015/05/Assessing_the_case_for_in-country_mobile_consolidation.pdf> accessed 26 March 2017
- ^{cxlvi} Mobile Virtual Network Operators are mobile operators that do not own spectrum or have their own infrastructure: <https://www.techopedia.com/definition/26081/mobile-virtual-network-operator-mvno>
- ^{cxlvii} *T-Mobile / Orange Netherlands* (Case COMP/M.4748) OJ L-2985 [2007]
- ^{cxlviii} BEREC, ‘BEREC Guidelines on the Implementation by National Regulators of European Net Neutrality Rules’ (2016) BoR (16)127 <http://berec.europa.eu/eng/document_register/subject_matter/berec/regulatory_best_practices/guidelines/616-0-berec-guidelines-on-the-implementation-by-national-regulators-of-european-net-neutrality-rules> accessed 27 November 2016
- ^{cxlix} *ibid* 12
- ^{cl} Alison Jones and Brenda Sufrin, *EU Competition Law: Text, Cases, and Materials* (6th edn, OUP 2016)
- ^{cli} BEREC, ‘BEREC Guidelines on the Implementation by National Regulators of European Net Neutrality Rules’ (2016) BoR (16)127 <http://berec.europa.eu/eng/document_register/subject_matter/berec/regulatory_best_practices/guidelines/616-0-berec-guidelines-on-the-implementation-by-national-regulators-of-european-net-neutrality-rules> accessed 27 November 2016
- ^{clii} *Universal Music Group / EMI Music* (Case COMP/M.6458) [2012] C(2012) 6459 final
- ^{cliii} *Universal Music Group / EMI Music* (Case COMP/M.6458) [2012] C(2012) 6549 final
- ^{cliv} European Commission, ‘Impact Assessment Accompanying the document Proposal for a Regulation of the European Parliament and the Council to ensure cross-border portability of online content services in the internal market’ SWD(2015) 270 final
- ^{clv} The term ‘New Economy’ is for example used in Alison Jones and Brenda Sufrin, *EU Competition Law: Text, Cases, and Materials* (6th edn, OUP 2016)
- ^{clvi} Erik Brynjolfsson and Andrew McAfee, *The Second Machine Age* (1st edn, W.W. Norton & Company 2014)
- ^{clvii} *ibid*
- ^{clviii} *ibid*
- ^{clix} RTL Nieuws, ‘86 procent van onze streamingmarkt is in handen van Spotify’ (*RTLnieuws*, 5 February 2016) <<http://www.rtlnieuws.nl/economie/home/86-procent-van-onze-streamingmarkt-handen-van-spotify>> accessed

26 March 2017. See also: <https://twitter.com/MusicEcon101/status/695596598294872064> for the screenshot on the basis of which the information about the market shares has been leaked. Note, however, that the methodology for establishing the market shares is unknown.

clx Alison Jones and Brenda Sufrin, *EU Competition Law: Text, Cases, and Materials* (6th edn, OUP 2016)

clxi Anna Gerbrandy and Roos Elemans, 'Technologie-ondernemingen in het mededingingsrecht: Ingrijpen of niet ingrijpen door een toezichthouder, is dat de vraag?' (2016) *Ars Aequi* AA20160009

clxii Alison Jones and Brenda Sufrin, *EU Competition Law: Text, Cases, and Materials* (6th edn, OUP 2016)

clxiii *ibid*

clxiv Anna Gerbrandy and Roos Elemans, 'Technologie-ondernemingen in het mededingingsrecht: Ingrijpen of niet ingrijpen door een toezichthouder, is dat de vraag?' (2016) *Ars Aequi* AA20160009

clxv *Microsoft / Skype* (Case COMP/M.6281) OJ L-2985 [2011]

clxvi *Facebook / Whatsapp* (Case COMP/M.7217) OJ L-2985 [2014]

clxvii *Microsoft / Skype* (Case COMP/M.6281) OJ L-2985 [2011]

clxviii *Microsoft / Skype* (Case COMP/M.6281) OJ L-2985 [2011]

clxix Case 85/76 *Hoffmann-La Roche* [1979] ECR 464

clxx Anna Gerbrandy and Roos Elemans, 'Technologie-ondernemingen in het mededingingsrecht: Ingrijpen of niet ingrijpen door een toezichthouder, is dat de vraag?' (2016) *Ars Aequi* AA20160009

clxxi European Commission, 'Guidelines on the assessment of horizontal mergers under the Council Regulation on the control of concentrations between undertakings' (2004) 2004/C 31/03

clxxii BEREC, 'BEREC Guidelines on the Implementation by National Regulators of European Net Neutrality Rules' (2016) BoR (16)127

clxxiii Alison Jones and Brenda Sufrin, *EU Competition Law: Text, Cases, and Materials* (6th edn, OUP 2016)

clxxiv BEREC, 'BEREC Guidelines on the Implementation by National Regulators of European Net Neutrality Rules' (2016) BoR (16)127

clxxv Mario Aguilar, 'How Much Data Does Your streaming Music App Eat up?' (*Gizmodo*, 22 October 2014)

<<http://gizmodo.com/how-much-data-does-your-streaming-music-app-eat-up-1649466894>> accessed 26 March 2017

clxxvi *ibid* 19

clxxvii BEREC, 'BEREC Guidelines on the Implementation by National Regulators of European Net Neutrality Rules' (2016) BoR (16)127

<http://berec.europa.eu/eng/document_register/subject_matter/berec/regulatory_best_practices/guidelines/6160-berec-guidelines-on-the-implementation-by-national-regulators-of-european-net-neutrality-rules> accessed 6

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clxxviii Belgian Institute for Postal Services and Telecommunications, 'Report Regarding the Analysis of Zero-rating of Apps in the Proximus Offers' (*BIPT*, 30 January 2017)

<http://www.bipt.be/public/files/en/22099/Report_Zero_rating_Proximus.pdf> accessed 6 May 2017

clxxix *ibid* 14

clxxx *ibid* 15

clxxxi *ibid* 16

clxxxii *ibid* 15

clxxxiii BEREC, 'BEREC Guidelines on the Implementation by National Regulators of European Net Neutrality Rules' (2016) BoR (16)127

<http://berec.europa.eu/eng/document_register/subject_matter/berec/regulatory_best_practices/guidelines/6160-berec-guidelines-on-the-implementation-by-national-regulators-of-european-net-neutrality-rules> accessed 6

clxxxiv Note, however, that it is unclear when exactly the market position of an application provider will make a zero-rating deal problematic under the BEREC Guidelines.

clxxxv Note, however, that it is unclear when exactly the market position of an IAP will make a zero-rating deal problematic under the BEREC Guidelines.

clxxxvi Note that it is unclear under the BEREC Guidelines for which size of the data cap a zero-rating deal becomes problematic.

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<http://berec.europa.eu/eng/document_register/subject_matter/berec/regulatory_best_practices/guidelines/6160-berec-guidelines-on-the-implementation-by-national-regulators-of-european-net-neutrality-rules> accessed 27 November 2016
- ^{clxxxviii} Barbara van Schewick, 'Network Neutrality and Zero-rating' (2015) Attachment to Barbara van Schewick's Ex Parte in the Matter of Protecting and Promoting the Open Internet submitted February 19, 2015 to the Federal Communications Commission GN Dkt. No. 14-28
<<https://cyberlaw.stanford.edu/files/publication/files/vanSchewick2015NetworkNeutralityandZerorating.pdf>> accessed 6 May 2017
- ^{clxxxix} Oxera, 'Zero rating: free access to content, but at what price?' (Oxera, 2016) <<http://www.oxera.com/Latest-Thinking/Agenda/2016/Zero-rating-free-access-to-content,-but-at-what-pr.aspx>> accessed 6 May 2017
- ^{cx} Barbara van Schewick, 'Network Neutrality and Zero-rating' (2015) Attachment to Barbara van Schewick's Ex Parte in the Matter of Protecting and Promoting the Open Internet submitted February 19, 2015 to the Federal Communications Commission GN Dkt. No. 14-28
<<https://cyberlaw.stanford.edu/files/publication/files/vanSchewick2015NetworkNeutralityandZerorating.pdf>> accessed 6 May 2017
- ^{cxci} Tim Wu, 'Network Neutrality, Broadband Discrimination' (2003) Journal of Telecommunications and High Technology Law, Vol. 2, p. 141
- ^{cxcii} Barbara van Schewick, 'T-Mobile's Binge On Violates Key Net Neutrality Principles' (2016) Stanford University
<<https://cyberlaw.stanford.edu/downloads/vanSchewick-2016-Binge-On-Report.pdf>> accessed 6 May 2017
- ^{cxci} *ibid* 3
- ^{cxci} Barbara van Schewick, 'Network Neutrality and Zero-rating' (2015) Attachment to Barbara van Schewick's Ex Parte in the Matter of Protecting and Promoting the Open Internet submitted February 19, 2015 to the Federal Communications Commission GN Dkt. No. 14-28
<<https://cyberlaw.stanford.edu/files/publication/files/vanSchewick2015NetworkNeutralityandZerorating.pdf>> accessed 6 May 2017
- ^{cxci} Jeffrey A. Eisenach, 'The Economics of Zero Rating' (2015) Nera Economic Consulting <<http://www.nera.com/content/dam/nera/publications/2015/EconomicsofZeroRating.pdf>> accessed 6 May 2017
- ^{cxci} Barbara van Schewick, 'Network Neutrality and Zero-rating' (2015) Attachment to Barbara van Schewick's Ex Parte in the Matter of Protecting and Promoting the Open Internet submitted February 19, 2015 to the Federal Communications Commission GN Dkt. No. 14-28
<<https://cyberlaw.stanford.edu/files/publication/files/vanSchewick2015NetworkNeutralityandZerorating.pdf>> accessed 6 May 2017
- ^{cxci} *ibid* 3
- ^{cxci} Barbara van Schewick, 'T-Mobile's Binge On Violates Key Net Neutrality Principles' (2016) Stanford University
<<https://cyberlaw.stanford.edu/downloads/vanSchewick-2016-Binge-On-Report.pdf>> accessed 6 May 2017
- ^{cxci} *ibid* 18
- ^{cc} *ibid* 23
- ^{cci} An NGO in the Netherlands with the purpose to defend digital rights, called Bits of Freedom, claimed in an enforcement request to the Dutch telecom authority that certain application providers might not be aware of the zero-rating deal from T-Mobile Netherlands and that some application providers do not master the language of the procedure to join the zero-rating scheme. See: Bits of Freedom, 'T-Mobile mag van de rechter doorgaan met haar abonnement waarmee ze overduidelijk de Europese netneutraliteitsregels overtreedt, zo oordeelt de rechter eind vorige maand. Niet de ACM, maar de internetter is de grootste verliezer. Daarom hebben we de ACM opgeroepen er een schepje bovenop te doen' (BoF, 16 May 2017) <<https://bof.nl/2017/05/16/acm-moet-werk-maken-van-handhaving-netneutraliteit/>> accessed 9 July 2017
- ^{ccii} Barbara van Schewick, 'T-Mobile's Binge On Violates Key Net Neutrality Principles' (2016) Stanford University
<<https://cyberlaw.stanford.edu/downloads/vanSchewick-2016-Binge-On-Report.pdf>> accessed 6 May 2017
- ^{ccii} *ibid* 19

- ^{cciv} BEUC, 'Net Neutrality in Europe: Time for clear rules of the game' (2016) BEUC-X-2016-049 <http://www.beuc.eu/publications/beuc-x-2016-049_gbe_net_neutrality_in_eu-time_for_clear_rules_of_the_game.pdf> accessed 6 May 2017
- ^{ccv} Doug Brake, 'Mobile Zero Rating: The Economics and Innovation behind Free Data' (2016) Information Technology & Innovation Foundation <<http://www2.itif.org/2016-zero-rating.pdf>> accessed 6 May 2017
- ^{ccvi} *ibid* 3
- ^{ccvii} Digital Fuel Monitor, 'In the Netherlands, where zero-rating is banned, KPN just doubled (free of charge) the mobile internet volume caps to encourage a carefree usage of its online videos' (*Digital Fuel Monitor*, 6 February 2015) <http://dfmonitor.eu/downloads/Banning_zerorating_leads_to_higher_volume_caps_06022015.pdf> accessed 6 May 2017
- ^{ccviii} Digital Fuel Monitor, 'Zero-rated mobile applications/services in EU28, October 2014' (*Digital Fuel Monitor*, October 2016) <http://dfmonitor.eu/downloads/Zero_rating_list_EU28_Q4_2014_public.pdf> accessed 6 May 2017
- ^{ccix} Barbara van Schewick, 'Network Neutrality and Zero-rating' (2015) Attachment to Barbara van Schewick's Ex Parte in the Matter of Protecting and Promoting the Open Internet submitted February 19, 2015 to the Federal Communications Commission GN Dkt. No. 14-28 <<https://cyberlaw.stanford.edu/files/publication/files/vanSchewick2015NetworkNeutralityandZerorating.pdf>> accessed 6 May 2017
- ^{ccx} *ibid* 6
- ^{ccxi} *ibid* 3
- ^{ccxii} *ibid* 3
- ^{ccxiii} Barbara van Schewick, 'Network Neutrality and Zero-rating' (2015) Attachment to Barbara van Schewick's Ex Parte in the Matter of Protecting and Promoting the Open Internet submitted February 19, 2015 to the Federal Communications Commission GN Dkt. No. 14-28 <<https://cyberlaw.stanford.edu/files/publication/files/vanSchewick2015NetworkNeutralityandZerorating.pdf>> accessed 6 May 2017
- ^{ccxiv} Jeffrey A. Eisenach, 'The Economics of Zero Rating' (2015) Nera Economic Consulting <<http://www.nera.com/content/dam/nera/publications/2015/EconomicsofZeroRating.pdf>> accessed 6 May 2017
- ^{ccxv} *ibid* 9
- ^{ccxvi} T-Mobile, 'Datavrije Muziek', (*T-Mobile*) <<https://www.t-mobile.nl/datavrije-muziek>> accessed 4 June 2017
- ^{ccxvii} Barbara van Schewick, 'Network Neutrality and Zero-rating' (2015) Attachment to Barbara van Schewick's Ex Parte in the Matter of Protecting and Promoting the Open Internet submitted February 19, 2015 to the Federal Communications Commission GN Dkt. No. 14-28 <<https://cyberlaw.stanford.edu/files/publication/files/vanSchewick2015NetworkNeutralityandZerorating.pdf>> accessed 6 May 2017
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- ^{ccxx} Christopher S. Yoo, 'Beyond Network Neutrality' (2005) 19(1) *Harvard Journal of Law & Technology* <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=742404> accessed 4 June 2017
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- ^{ccxxii} Barbara van Schewick, 'Network Neutrality and Zero-rating' (2015) Attachment to Barbara van Schewick's Ex Parte in the Matter of Protecting and Promoting the Open Internet submitted February 19, 2015 to the Federal Communications Commission GN Dkt. No. 14-28 <<https://cyberlaw.stanford.edu/files/publication/files/vanSchewick2015NetworkNeutralityandZerorating.pdf>> accessed 6 May 2017
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- ^{ccxxiv} Roslyn Layton and Silvia E. Calderwood, 'Zero Rating: Do hard rules protect or harm consumers and competition? Evidence from Chile, Netherlands and Slovenia' (2015) https://papers.ssrn.com/sol3/papers.cfm?Abstract_id=2587542 accessed 6 May 2017
- ^{ccxxv} European Commission, 'Internet access of households, 2011 and 2016 (% of all households)' (2016) [http://ec.europa.eu/eurostat/statistics-explained/index.php/File:Internet_access_of_households,_2011_and_2016_\(%25_of_all_households\)_YB17.png](http://ec.europa.eu/eurostat/statistics-explained/index.php/File:Internet_access_of_households,_2011_and_2016_(%25_of_all_households)_YB17.png) accessed 6 May 2017
- ^{ccxxvi} In countries with a relatively low internet access rate, such as Bulgaria and Greece, this might for example be the case.
- ^{ccxxvii} Jeffrey A. Eisenach, 'The Economics of Zero Rating' (2015) Nera Economic Consulting <http://www.nera.com/content/dam/nera/publications/2015/EconomicsofZeroRating.pdf> accessed 6 May 2017
- ^{ccxxviii} See for example the data plans that T-Mobile Netherlands offers on its website, where the zero-rating offer is explicitly an option in between 5GB and unlimited data: <https://www.t-mobile.nl/go-unlimited> accessed 6 May 2017
- ^{ccxxix} Jeffrey A. Eisenach, 'The Economics of Zero Rating' (2015) Nera Economic Consulting <http://www.nera.com/content/dam/nera/publications/2015/EconomicsofZeroRating.pdf> accessed 6 May 2017
- ^{ccxxx} *ibid* 6
- ^{ccxxxi} *ibid* 6
- ^{ccxxxii} See again for example the offer as introduced by T-Mobile on the Dutch market: T-Mobile, 'Why limit Skyopen met oma?' (T-Mobile) <https://www.t-mobile.nl/go-unlimited> accessed 4 June 2017
- ^{ccxxxiii} See for the economic foundation of the reasoning that price discrimination leads – in certain markets and under certain conditions – to the extraction of consumer surplus from consumer with a relatively high willingness to pay, Paul Belleflamme and Martin Peitz, *Industrial Organization: Markets and Strategies* (1st edition, CUP 2010)
- ^{ccxxxiv} This is generally the case in the EU. See section 3.2.2.
- ^{ccxxxv} OECD, 'Wireless Market Structures and Network Sharing' (2014) OECD Digital Economy Papers No. 242
- ^{ccxxxvi} Jeffrey A. Eisenach, 'The Economics of Zero Rating' (2015) Nera Economic Consulting <http://www.nera.com/content/dam/nera/publications/2015/EconomicsofZeroRating.pdf> accessed 6 May 2017
- ^{ccxxxvii} *ibid* 5
- ^{ccxxxviii} CSS, 'Spotify: An Ecosystem Powered b Network Effects' (*Digital Innovation and Transformation*, 4 October 2015) <https://digit.hbs.org/submission/spotify-an-ecosystem-powered-by-network-effects/> accessed 26 March 2017
- ^{ccxxxix} CSS, 'Spotify: An Ecosystem Powered b Network Effects' (*Digital Innovation and Transformation*, 4 October 2015) <https://digit.hbs.org/submission/spotify-an-ecosystem-powered-by-network-effects/> accessed 26 March 2017
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- ^{ccxli} Regulation (EU) 2015/2120, preamble 1
- ^{ccxlii} See, for example, Jeffrey A. Eisenach, 'The Economics of Zero Rating' (2015) Nera Economic Consulting <http://www.nera.com/content/dam/nera/publications/2015/EconomicsofZeroRating.pdf> accessed 6 May 2017
- ^{ccxliii} See, for example, Martin Peitz and Florian Schuett, 'Net neutrality and inflation of traffic' (2016) *International Journal of Industrial Organization*, Vol. 46, p. 16
- ^{ccxliv} See, for example, Barbara van Schewick, 'Network Neutrality and Zero-rating' (2015) Attachment to Barbara van Schewick's Ex Parte in the Matter of Protecting and Promoting the Open Internet submitted February 19, 2015 to the Federal Communications Commission GN Dkt. No. 14-28 <https://cyberlaw.stanford.edu/files/publication/files/vanSchewick2015NetworkNeutralityandZerorating.pdf>

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- ccxlvi BEREC, 'BEREC Guidelines on the Implementation by National Regulators of European Net Neutrality Rules' (2016) BoR (16)127
<http://berec.europa.eu/eng/document_register/subject_matter/berec/regulatory_best_practices/guidelines/6160-berec-guidelines-on-the-implementation-by-national-regulators-of-european-net-neutrality-rules> accessed 6 May 2017
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- ccxlvi BEUC, 'Net Neutrality in Europe: Time for clear rules of the game' (2016) BEUC-X-2016-049
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<<https://cyberlaw.stanford.edu/downloads/vanSchewick-2016-Binge-On-Report.pdf>> accessed 6 May 2017
- ccl This argument has been inspired by the precautionary principle, as established in EU climate and environmental law. The precautionary principle means that it might be required to introduce a binding legal measure if it has been identified that there are "potentially dangerous effects deriving from a phenomenon and that scientific evaluation does not allow the risk to be determined with sufficient certainty". See: European Commission, 'Communication from the Commission on the precautionary principle' (2000) COM(2000) 1 final <<http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52000DC0001&from=EN>> accessed 9 July 2017
- ccli *ibid* 3
- cclii *ibid* 3
- ccliii See for example the literature about 'filter bubbles', such as Eli Pariser *The Filter Bubble: What The Internet is Hiding from You* (1st edition, Penguin Press 2011)
- ccliv Council of Europe, 'Recommendation on protecting and promoting the right to freedom of expression and the right to private life with regard to network neutrality' (2016) CM/Rec(2016)1
- cclv *ibid* 1
- cclvi Doug Brake, 'Mobile Zero Rating: The Economics and Innovation behind Free Data' (2016) Information Technology & Innovation Foundation <<http://www2.itif.org/2016-zero-rating.pdf>> accessed 6 May 2017
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<<https://cyberlaw.stanford.edu/downloads/vanSchewick-2016-Binge-On-Report.pdf>> accessed 6 May 2017
- cclviii T-Mobile, 'Go Unlimited', (*T-Mobile*) <<https://www.t-mobile.nl/go-unlimited>> accessed 4 June 2017
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<<http://nos.nl/artikel/2173308-nieuw-hoogtepunt-in-strijd-om-goedkoop-mobiel-internet.html>> accessed 4 June 2017
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